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USSR Report

AGRICULTURE

No. 1398

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MAJOR CROP PROGRESS AND WEATHER REPORTING

MOSCOW RADIO REPORTS AGRICULTURAL DEVELOPMENTS 1-9 AUGUST

1-2 August

LD030025 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 1-2 August. Times of broadcasts are given in parentheses at the end of each item.

1 August

Town-dwellers are lending a hand in Tomsk Oblast fodder procurement, having laid in 140,000 tons of green mass so far. (0001 GMT)

Harvesting of flax has begun in Smolensk Non-chernozem area. For the first time, a new, early-maturing strain--soyuz--with increased weather resistance, has been sown on large areas. (0400 GMT)

Farm workers in Mordovia are harvesting grain crops in complex weather conditions. Rain and hurricane winds have flattened the grain crops to the ground where they lie in a dense mass, unable to dry out because of the rain which falls almost daily. The farm workers, however, are countering the difficulties with good organization and their ability to operate under any conditions. (0600 GMT)

In Ryazan Oblast 250,000 tons of grain has been delivered to elevators, which is 40 percent of the plan. (0800 GMT)

Nearly 2 million hectares of early cereals have been reaped in Volgograd Oblast. (1100 GMT)

In Tambov Oblast 300,000 tons of grain crops have been delivered to elevators to date--almost one-third of the plan. (1200 GMT)

Karaganda Oblast today fulfilled the year's plan for procurement of coarse fodder. Farmers have laid 742,000 tons of hay and also 204,000 tons of haylage which is twice [as heard] the planned amount. Eighty five percent of the reserves have first-class nutritious value. (1230 GMT)

2 August

Grain harvesting has started in Novosibirsk Oblast; 500,000 hectares to be cut in all. (0001 GMT)

Grain crops have been cut on half the area sown to them in Belorussia. Gomel and Brest Oblast farmers are working fastest. (0330 GMT)

Saratov Oblast farmers have harvested 2 million hectares of grain crops. (0400 GMT)

Harvesting has begun in Novosibirsk. Cultivation of winter wheat here is in its infancy; good results are being achieved on a small scale with a new strain--(ulyanovska-sibirskaya)--which may be used on a commercial basis. (0400 GMT)

Grain and pulse crops have to date been harvested on 500,000 hectares in Penza Oblast. (0700 GMT)

Harvesting of winter rye and peas has started in the Altay; the crops cover over 200,000 hectares. Preparations for sowing have already begun--the winter crop area will be increased to 250,000 hectares. (0700 GMT)

The harvest in Amur Oblast is unfolding in difficult weather conditions. This year the farmers of Amur intend to sell the state 410,000 tons of breadgrain. (0900 GMT)

In Maritime Kray the grain harvest has begun. Combines have been equipped to deal with crops flattened by frequent rains. (1000 GMT)

3-4 August

LD050019 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 3-4 August. Times of broadcasts are given in parentheses at the end of each item.

3 August

The pace of harvest work is mounting in Gorkiy Oblast. To date grain crops have been cut on an area of almost 300,000 hectares. (0204 GMT)

To date Ryazan Oblast growers have delivered 300,000 tons of grain. (0400 GMT)

Bukhara Oblast in Uzbekistan has begun harvesting grain corn. A yield of 90-100 quintals per hectare is being obtained. (0400 GMT)

Cereals have been cut on 250,000 hectares in Morodovia ASSR, 70 percent of which has been threshed. Over 80,000 tons grain has been delivered to granaries. (0800 GMT)

Kustanay Oblast has begun mass harvesting of pulses. Next year the area sown to pulses is to double. (1100 GMT)

Some 400,000 tons of grain of the new harvest were today delivered to procurement enterprises and elevators by Tambov Oblast's crop farmers. This is 40 percent of the plan. (2230 GMT)

4 August

To date grain crops have been laid in windrows on almost 700,000 hectares in Kuybyshev Oblast. This is about 40 percent of their total area. (0204 GMT)

In southern Kazakhstan the most generous yields have been obtained from grain crops in the foothills zone. Most farms in Lenger, Tyulkubasskiy and Sayramskiy Rayons in Chimkent Oblast have exceeded their plans for grain sales to the state by 50 percent. The basis of their success has been the transition to the cultivation of winter crops, which in local conditions are more productive than spring crops. (0400 GMT)

The first 500,000 tons of grain has been delivered in Orenburg Oblast. (0400 GMT)

Harvest campaign has entered the final stage in Bryansk Oblast. Farms have curtailed considerably the gap between cutting and threshing operations, caused by frequent rains. To date 90 percent of grain that has been cut have been threshed. At the same time, harvesting and transport complexes are preparing the soil for sowing of winter crops. (0900 GMT)

Mass harvesting of grain crops began last week in Estonia. To date they have been harvested on 26 percent of the sown area. (1330 GMT)

5-7 August

LD080028 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 5-7 August. Times of broadcasts are given in parentheses at the end of each item.

5 August

Tselinograd Oblast workers have fulfilled their year's plan for the procurement of hay. Over 1.1 million tons of hay have been put in store. This is double last year's amount. (0001 GMT)

To date 400,000 tons of grain have been delivered in Kuybyshev Oblast. This is 28 percent of the planned amount. (0400 GMT)

To date 100,000 tons of grain have been delivered in Ulyanovsk Oblast. (0400 GMT)

Kashka-Darya Oblast farmers are the first in Uzbekistan to complete their fodder procurement pledges. Over 1 million tons of hay, haylage and vitaminized meal has been stored for the winter. Grass cutting is in full swing throughout the oblast. In the republic as a whole, nearly 1 million tons more of grasses have been cut compared with last year. (0600 GMT)

Volgograd Oblast farmers have delivered 1.5 million tons of grain to date. Rain and hail have made conditions difficult. (0700 GMT)

6 August

More than 500,000 tons of grain has been delivered to date in Tombov Oblast. This is over 50 percent of the oblast's plan. (0001 GMT)

Almost 1.5 million tons of grain has been delivered to date in Saratov Oblast. (0400 GMT)

Leningrad farmers began harvesting rye and barley. Harvesting has begun earlier than usual. Silage harvesting machines have gone out onto corn fields of Kuban. (0800 GMT)

To date Kazakhstan's state and collective farms have procured 12 million tons of hay. This is three quarters of the annual plan. This work is proceeding better in Karaganda and Tselinograd Oblasts than in other oblasts. (1200 GMT)

In Ryazan Oblast 400,000 tons of grain have been delivered to state granaries to date. (1530 GMT)

In Dnepropetrovsk Oblast mass harvesting of corn for silage started today. (1530 GMT)

7 August

In Kuybyshev Oblast more than 500,000 tons of grain has been dispatched to reception points. (2230 GMT)

In Saratov Oblast up to 85,000 tons of grain a day are being received at reception points. Spring wheat has started arriving. [no time given]

8-9 August

LD100555 [Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 8-9 August. Times of broadcasts are given in parentheses at the end of each item.

8 August

Grain crops have been reaped on one-third of the area sown in the RSFSR. Grain is harvested daily on around 1 million hectares there. (0400 GMT)

In the Volga Valley, 9 out of 25 rayons in Kuybyshev Oblast have completed threshing of winter rye and wheat, and have switched equipment to the collection of windrows of early spring crops. Over 500,000 tons of grain has already been dispatched to reception points. (1100 GMT)

Syr-Darya Oblast, Uzbekistan, has started harvesting corn for grain, hard on the heels of southern areas. In Surkhan-Darya Oblast, corn has been cut on

over half of the acreage, with an average grain yield of 80 quintals per hectare and silage material yield of 450 quintals per hectare on irrigated areas. (1100 GMT)

Chimkent, Dzhambul, Alma-Ata, and Uralsk Oblasts, Kazakhstan, today started sowing winter crops. The republic intends to sow 2 million hectares to winter crops. Autumn plowing has begun. (1100 GMT)

Grain crops have been harvested from 1 million hectares in Uralsk Oblast; they have been threshed from 900,000 hectares. (2300 GMT)

9 August

The first 150,000 metric tons of corn grain crops of the new harvest has been threshed today in Uzbekistan. (0200 GMT)

Rayons of Corkiy Oblast are reporting fulfillment of plans for grain crop sales to the state; 217,000 metric tons of winter rye, wheat, and barley have already been delivered to procurement enterprises, which is 67 percent of the annual plan. Daily, 20,000-25,000 metric tons of grain crops are being delivered. (0204 GMT)

The first 150,000 metric tons of corn for grain crops from the new harvest has been threshed up to today in Uzbekistan. (0600 GMT)

Three quarters of the grain crop fields have been cut in Tula Oblast. (0600 GMT)

In the southern rayons of Saratov Oblast, the sowing of winter crops has begun. The frequent rains have watered the soil well. All the prepared seed is of first and second class. New types have appeared, in particular Saratov-5 rye, and Severo-Donskaya wheat. They produce 2-3 quintals of grain more per hectare, and are more disease resistant. Practice shows that winter crops in the Volga region produce stable harvests. This year, for example, many farms produced 20-25 quintals per hectare. This is why it has been decided to expand the area sown to winter crops by 500,000 hectares, and bring it up to 1.2 million hectares. The winter crops will in the main be accommodated on well-tilled fallow land. (0600 GMT)

Early grain crop sales obligations have been overfulfilled by the farmers of Uzbekistan, Azerbaijan, Turkmenistan, and Chimkent Oblast, Kazakh SSR. This data has been reported by the country's Ministry of Procurement. In the RSFSR, the sovkhozes and kolkhozes of Krasnodar Kray made the greatest contribution to state resources. However, there is not a regular rate of grain crop procurement everywhere--deliveries of grain crops to the state have dropped from farms in a number of oblasts in the RSFSR and the Ukraine. (0700 GMT)

The wheat harvest has begun in Karaganda. The area is more than 1 million hectares. (1100 GMT)

Crimean kolkhozes and sovkhozes have begun to make corn silage. (1100 GMT)

the sowing of winter rye has begun in Tuva. High-yield varieties are being planted simultaneously with the addition of fertilizer to the soil. Farms are doubling the area sown to winter cereals. (1100 GMT)

Sowing of winter crops has started in southern areas of Saransk Oblast. All seeds of first or second class. There are also new varieties this year--Zarazovskaya-5 rye and Severdonskaya wheat--more high-yielding by 2-3 quintals per hectare. (2004 GMT)

Selective harvesting of early grain crops has started in Kustanay Oblast, earlier than usual. Grains occupy over 4 million hectares in the oblast. (2230 GMT)

CSO: 1824/519

MAJOR CROP PROGRESS AND WEATHER REPORTING

CALL TO AVOID WASTE IN GRAIN HARVEST NOTED

PM050917 Moscow IZVESTIYA in Russian 28 Jul 82 Morning Edition p 1

(D. Pavlov "Agricultural Review": "The Grain Field Alongside the Feed Field"]

[Text] Harvest work is progressing well on farms in the Volga region and the Central chernozem region. Harvest and transport detachments have been working at a high pace from the very first days of the harvest. During the past week Volgograd Oblast farmers threshed grain on 622,000 hectares, Saratov machine operators on 519,000 hectares, and Voronezh machine operators on almost 300,000 hectares. Those are good results, especially since rain affected these regions, which naturally disrupted the harvest rhythm. In the country as a whole, by 25 July grain and pulse crops (excluding corn) had been cut on 33.4 million hectares and threshed on 27.7 million hectares, that is, 83 percent of the area cut. The gap between cutting and threshing is not big, as can be seen. The harvest is now underway in all our union republics.

The grain sales to the state are proceeding in organized fashion. Purchases are considerably higher than by this time last year. The procurement of strong and valuable wheats and pulses is progressing above last year's level.

The harvest is advancing fast this year. In Kaluga Oblast, for instance, it is a long time since harvesting started in mid-July but by 25 July 77 percent of the cut grain had been threshed.

I remember 1975. Then, too, they made an early start in the Non-Chernozem region. But farmers remember that year with sadness. "The drought of the century" is what they called it then. True, later it became obvious that such droughts can repeat themselves not so very infrequently in our century, unfortunately. This year, nonetheless, the grain is not bad in most parts of the Non-Chernozem region. But farmers' "luck" again: in some places it had been far too hot just when the ears were swelling, elsewhere storms flattened and tangled the grain. Apparently, our farmers are not destined to have an easy life. And this is not discovery, it is plain obvious: in planning the various campaigns in crop farming, the production organizers and specialists everywhere from the Baltics to Maritime Kray, from Arkhangelsk to the Crimea must be prepared to cope with work in the most difficult conditions. And at all times they must strictly abide by the rule: Everything that has been

grown must be preserved and reach the consumer in the best possible condition. This has been said before. And there have been good achievements and initiatives. But, alas, even today there still are unjustifiably high harvest losses in a number of regions.

And that is something that is causing alarm. To cite an example, there is a whole series of technological problems in vegetable growing. We lose much fruit and soft fruit. This is bad, of course, and annoying. However, this is a practical difficulty, a problem which needs to be solved as quickly as possible. But in principle, is the problem of a waste-free harvest of grain and other crops really so unsolvable? After all, the new generation of Kolos and Niva combines has been fully assimilated in our fields. A considerable number of gadgets have been invented for harvesting even the most "difficult" grain. Threshing floors are also better equipped now, and the Kamaz is becoming a "farm" truck, at least as far as the transportation of grain is concerned. Furthermore, the Ipatovskiy and other methods which provide for the utilization of machinery by large groups have been mastered. And despite all this, the scientists have this to say: to start with, statistics show that the average performance per season of a new generation combine is only marginally above that of an SK-4, and the physical losses of grain have not decreased. It would be okay if it were a matter of harvests too big for the present combines to "chew." But this is not the case: given average and even rather poor grain outputs, the losses are proportionately the same quite often. Why? In general, this is a topic for a serious, analytic discussion. For the moment, going on the still fresh impressions from the first month of the harvest I should merely like to say this:

On my travels through our southern grain producing areas at the height of the harvest I repeatedly observed "idle" combines in the machine yards. People busied themselves around some of them. But there were also quite a few which obviously would not be employed in this year's harvest.

And here are some figures. In Rostov Oblast at the height of the harvest 5 percent of harvesters were unfit for work, in Orel Oblast--11 percent, in Kursk Oblast--4 percent, and in Volgograd Oblast--7 percent. And what does the Rostov Oblast 5 percent represent? More than 1,000 modern, and let me remind you, very expensive machines.

And the level of machines readiness bears directly on this. I am convinced that the 1,000 Rostov machines which failed to reach the fields seriously disrupted the "optimum" work plan drawn up by the specialists, which meant that the machine operators had to hurry excessively and started fussing. And that always means losses.

But, of course, fodder too demands the same concern as grain. The statistics present a favorable picture in this respect: 13.3 million metric tons more hay and 7.5 million metric tons more haylage than last year have been procured. Second sowings of grasses and other fodder crops have been made on 2.4 million hectares. However, don't let us flatter ourselves. In many regions livestock fodder provisions for the winter are far from the optimum norm.

In short, much work still remains to be done in the fields, meadows and pastures.

MAJOR CROP PROGRESS AND WEATHER REPORTING

STEPS TO HIGHER YIELDS ON EASTERN KAZAKHSTAN SOVKHOZ DISCUSSED

Alma Ata KAZAKHSTANSKAYA PRAVDA in Russian 24 May 83 p 1

[Article by KAZAKHSTANSKAYA PRAVDA correspondent P. Shchuplov]

[Excerpts] (Glubokovskiy Rayon, Vostochno-Kazakhstanskaya Oblast) The warm rain turned everything a bright green; the grasses began to show signs of growth first, then the pea sprouts soon began to break through to the surface. It seemed, though, that they had been planted only yesterday.

"They took care of it in three days," Mikhail Nikolayevich Grokhotov, chief agronomist for Veselovskiy Sovkhoz, tells us. "We put in 350 hectares of them."

This isn't the first year this farm has put them in, and the people here look at them like they would any grain crop. That's why they always try to get them in at the best times. The agronomist thinks the time factor is important for all crops. So right after the peas they put in their barley and oats. Next comes the wheat.

Snow retention and the storage of snowmelt have become required agricultural methods. It really difficult to believe that, thanks to the adoption of these measures, the past dry year saw the sovkhoz harvest 23.6 quintals of grain per hectare and almost 27 quintals of sunflower seed. It turned 11,000 tons of grain over to the state, 2000 tons more than called for by the plan.

But even these figures don't suit the chief agronomist. He believes the soil can yield even more if it is taken care of properly. He is focusing his attention primarily upon chemical applications. Analysis has shown that the soil in the sovkhoz fields has accumulated large amounts of potassium but is short on phosphorus and other trace nutrient elements.

M. N. Grokhotov has at the same time given attention to possibilities offered by changing grain strains and begun to introduce the most productive and drought-resistant of them. This year he set aside 50 hectares where he sowed Omskaya-9 wheat and 150 for Kutulukskaya. These will be tested under the conditions prevailing in eastern Kazakhstan. In addition to producing good yields, the Omskaya-9 is not susceptible to disease and doesn't lodge or kink, even in heavy rain. The sovkhoz sowed 900 hectares of winter wheat for the first time last year. These are all ways to increase grain production. M. N. Grokhotov thinks millet as well could be grown successfully on the farms here. This yet another addition to the loaf.

MAJOR CROP PROGRESS AND WEATHER REPORTING

WATER-RETENTION PROGRAMS IN EASTERN KAZAKHSTAN

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 26 Apr 83 p 1

[Article by special KAZAKHSTANSKAYA PRAVDA correspondent P. Shchuplov: "To Be Able to Withstand Drought"]

[Excerpts] This winter in the Rudnyy Altay has been an unusual one. It began with thunderstorms, heavy rains and blowing and drifting snow. Then in January, instead of bitter cold, a thaw set in, the sun melting all the snow from the fields. The end of February saw the beginning of truly spring weather, now arriving before the return of the rooks and starlings. In the first half of March temperatures rose to 15-18 degrees. Snow had completely disappeared from fields in the southern rayons.

With the objective of creating a reserve of moisture in the soil, the oblast agricultural administration developed a program of measures to water and irrigate cropland, meadows and pastures. It was proposed that farms build dams and dikes and a system of irrigation ditches and watercourses and take steps to retain the runoff from melting snow. In addition to liman meadows and pastures, plans have called for the irrigation of more than 90,000 hectares of cropland, feed crops accounting for 56,000 of these hectares, grain crops for 21,000. To insure uninterrupted supplies of water, 40 pumping stations are being converted from diesel to electric drive, while 32 Fregats, 42 Dneprs and 237 Volzhankas are being readied to go into operation. More than 1300 irrigation workers have gone through special courses of instruction and are already on the job.

They have started with massive irrigation of fields on farms in Kurchumskiy and Tavricheskiy Rayons. Water will be supplied via the main Altay canal from the Kurchum River.

Things look different in Glubokovskiy, Zyryanovskiy and Shemonaikhinskiy Rayons, however. Steps taken here have been limited to those involving snow retention and the construction of artificial reservoirs. In the meantime, the snow is melting rapidly, the runoff going into the rivers. It should have been trapped and diverted into the fields. Farm managers in the area, however, have been unable to do more.

Much has been accomplished in Shemonaikhinskiy Rayon to get ready for spring. Seed has been cleared and graded; 250,000 tons of manure have been taken out to

the fields and equipment has been repaired and serviced. Twenty-three field-crop cultivation teams will be working in accordance with a unified work plan this year. You would think things are looking good here. The problem, though, is that nobody has given any thought to the need to take steps to insure good soil moisture in the hope that the rich soils here would not let grain growers down during periods of drought. Land reclamation operations within the rayon are currently leaving much to be desired.

According to the predictions of weather forecasters, Eastern Kazakhstan is facing a very dry spring. The best farms here are therefore attempting to retain and accumulate as much moisture as possible in their fields and reviewing their field work schedules so as to be able to plan sowing operations at optimum times. The weather here is not be relied upon; the people here are looking, rather, to their own reserves and possibilities. In only all sovkhoz and kolkhoz managers would demonstrate the same concern. Time isn't waiting.

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CSO: 1824/425

MAJOR CROP PROGRESS AND WEATHER REPORTING

HEAVY WIND, HAIL REPORTED

Alma Ata KAZAKHSTANSKAYA PRAVDA in Russian 27 May 83 p 4

[Article by P. Ivanov: "There Was Heavy Wind and Hail"]

[Text] It happened on May 18. Heavy wind and hail struck the mining town of Zyryanovsk. Near the water-collecting station it looked as though a giant hand had simply sheared off 10 reinforced concrete supports and two electric-power transmission lines and knocked out 12 pumps supplying water to the town.

Changing into mine work clothes, L. Ponomarev, director of the Zyryanovsk lead combine, and V. Adeyenko, chief power engineer, made their way to the scene. A 6-kilowatt line lay strewn over trees and bushes, chopped into bits and pieces by egg-size hailstones.

An emergency team led by Ivan Rastopchuk, deputy power network supervisor, and Pavel Chepkasov, power substation foreman, worked in pouring rain. Two special well holes were drilled and four general-purpose poles and an emergency line put up.

By four o'clock in the morning, drinking water had begun to gurgle through household lines once again. People nevertheless continued to work in the bad weather on the water intake. They also put in six main power transmission line supports as called for by the basic diagram, with two supports below to insure that another blow from the elements would not put them out of service.

A combined team then came in to replace temporary equipment and insure continuous pump operation. Viktor Zander, chief of the combine's construction and installation directorate, did not leave the scene until all repairs necessitated by the storm had been completed. So thanks to the quick and coordinated response of the combine's construction and electrical installation personnel and specialists from the Altayenergo association, the emergency situation at the water intake facility was dealt with successfully and things returned to normal.

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CSO: 1824/425

MAJOR CROP PROGRESS AND WEATHER REPORTING

RSFSR: TRANSPORT WORKERS HINDER GRAIN HARVEST

PM050915 Moscow PRAVDA in Russian 28 Jul 83 Edition [as printed] p 1

[1. Antonov "Agricultural Review": "Along the Grain Routes"]

[Text] Every day more and more of the country's regions are joining in the harvest effort. In the past week the increase in the harvested area amounted to 7.7 million hectares. Since the beginning of the harvest, according to the USSR Central Statistical Administration, grain crops have been cut on a total of 35.4 million hectares by 25 July, and the grain has been threshed on a considerable part of the fields.

Gathering in the harvest, farmers are endeavoring to speedily fulfill their number one order--to give the country as much grain as possible. The collectives on many farms where the harvest has already been completed or is drawing to a close have successfully coped with dispatching the grain to elevators.

Drivers, too, have contributed to these achievements. The editorial office asked V. Medvedev, RSFSR deputy minister of motor transport, and I. Filatov, chief of the main transport administration of the USSR State Committee for Supply of Production Equipment for Agriculture [Goskomselkhoztekhnika], to give an account of how grain transport is organized and how drivers are helping the grain growers.

Wherever the harvest is under way, V. Medvedev noted, drivers are working alongside the machine operators. In Orenburg Oblast, for instance, farmers and procurement workers unfailingly recognize the drivers from the teams headed by F. Mursalimov and V. Khvalev. They have their own distinctive way of working, marked by efficiency and precision. It is no accident that they daily overfulfill the output norm by 50 percent.

This year, in accordance with the target set by the RSFSR Ministry of Motor Transport and the RSFSR Ministry of Procurement, more than 85 percent of the grain sold to the state by the republic's kolkhozes and sovkhozes will be conveyed to elevators by centrally organized transport, operating according to timetables. For this purpose special motor transport detachments have been set up. They comprise around 130,000 trucks.

In order to reduce the time needed to deliver the output and to increase truck productivity efforts are being made to utilize leading labor organizations methods. The method of centralized planning is being applied to grain shipments from the fields to the elevators; due consideration is given to all changes which occur on farm threshing floors in the course of 24 hours, and the timetable for each truck is calculated by means of a computer. This method has been introduced in over 400 rayons. More than 8,000 teams will employ the collective contract method. This will enhance truck performance, as has incidentally, been confirmed by the indicators achieved by 21 July. For instance, the trucks involved in the harvest in the RSFSR have already delivered 54 million metric tons of agricultural freight, while the volume of deliveries by this time last year amounted to considerably less--21.4 million metric tons.

In the subdivisions of the Goskomselkhoztekhnika there are also many drivers and collectives who successfully apply progressive labor methods and achieve high indicators, I. Filatov reported. In Kharkov Oblast, for instance, the Sakhnovshchinskiy Rayon Selkhoztekhnika driver G. Lisnyak has transported 1,100 metric tons of grain. And the Ukrainian SSR Goskomselkhoztekhnika transport workers are conveying almost 200,000 metric tons of grain to granaries per 24 hours.

This year 165,000 trucks will be allocated to help with the harvest. The Goskomselkhoztekhnika trucks are primarily being used as part of harvesting-and-transport detachments in the transportation of grain from the fields to the threshing floors. How efficient this kind of cooperation is, is shown by the results of the work of the link headed by Hero of Socialist Labor N. Pereverzeva and the drivers' team of G. Korotkov: they achieve high indicators in harvest work year after year.

Of course, there are achievements among the drivers. But they could be considerably bigger. The RSFSR Ministry of Motor Transport has recently analyzed the work of its enterprises and arrived at the following conclusion: The utilization of trucks has still not been organized well everywhere, nor has monitoring of the drivers' performance, and that, naturally, lowers the productivity of the equipment. Let us take the second 10-day period of July as an example. Whereas in Kuybyshev, Saratov, Tula, and Lipetsk Oblasts the average daily truck output amounted to 14-17 metric tons, in Bryansk, Orel, and Astrakhan Oblasts and the Dagestan and Kalmyk ASSR's it totaled only 3-7 metric tons. That is quite a substantial difference. Another cause of annoyance is the long delays to which trucks are subject. Thus on 19 July, of the trucks allocated to harvest work 2,832 were idle in Krasnodar Kray: 1,039 in Volgograd Oblast; 2,050 in Rostov Oblast; 2,427 in Orenburg Oblast; and 11,839 in the republic as a whole. And the reason? They had no tires. Many trucks are idle because of a lack of batteries. Of course, there are quite a few shortcomings in the work of the ministry. But also the suppliers of tires, spare parts, and fuel often let people down....

The USSR Goskomselkhoztekhnika, too, was unable to immediately employ all the trucks allocated for the transportation of grain and use them with maximum efficiency. Partly its own subdivisions were to blame, and partly their partners let them down. In a number of union republics, Selkhoztekhnika transport enterprise leaders are too timid to introduce leading methods in the organization of transport. Nor are tires and batteries allocated to them in sufficient quantities. Thousands of truck-trailers have been dispatched to farms. But a shortage of large-capacity automatic scales on kolkhozes and sovkhozes and at procurement centers means that drivers lose much time weighing the grain. All this is giving rise to serious criticism. The farms cannot dispatch the grain to the elevators in good time, it stays on the threshing floors too long, and also the drivers lose pay. More attention should be paid to the organization of motor transport by the new administrative organs--the oblast and rayon agroindustrial associations.

The cited facts bear out that the country's motor transport workers have tremendous reserves in the sphere of enhancing transport productivity. If all trucks were in operation (thousands are idle daily), the drivers' performances would be higher, ever so many goods could be carried in addition and the requirement for transport facilities would be reduced. Here, much can be done by the drivers themselves. It is important, through better labor organization and the introduction of leading methods, to bring the performance of laggard drivers up to the level of pacesetters, to ensure more efficient, flexible planning of shipments, and together with farm specialists and procurement workers to organize smooth loading and unloading operations at threshing floors and elevators. And the other ministries and departments, on whom the deliveries of tires, batteries, fuel, and spare parts depend, must also devote all their attention to the interests of the harvest. The promptest possible measures must be adopted to ensure that there are no transport delays. The safekeeping of the grain and its speedy delivery to the state granaries largely depend on this.

CSO: 1824/521

MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

KAZAKHSTAN FARMING OPERATIONS--Farmers in Makanchinskiy Rayon were the first in the oblast to begin working toward the harvest for the third year of the current five-year plan period. This past winter has been notable for its light snowfalls; so, taking advantage of the brief warming trend that set in at the beginning of March, farmers throughout the rayon have been trying to trap the available moisture. Special attention is being given to strain regeneration. The drought-resistant Tselinnaya-21 wheat is now being planted more extensively. The well-proven Eritrospermum wheat is to be sown in the sandy soils, Saratovskaya-29 in the foothill regions. Universal efforts are being made to bring these seeds to their peak condition. We believe clean fallowing to be a no less important way to increase yields. While a year ago we were clean fallowing 7700 hectares throughout the rayon, this figure would now run to 25,000. We are also giving a great deal of attention to efforts to improve soil fertility. We have applied 196,000 tons of organic fertilizer to our plowed area over the winter, 6,000 above the figure targeted. We are feeling the breath of spring more and more each day. The boundless steppe between the foothills of the Tarbagatay Range and the sky-blue basin of Lake Alakol' will soon fill with the din of motors. The rayon's agricultural workers have set themselves high goals. They have resolved to sell the state 58,000 tons of grain and provide their livestock with all necessary supplies of coarse and succulent feeds. [By S. Mukhamed'yarov] [Excerpt] [Alma Ata KAZAKHSTANSKAYA PRAVDA in Russian 25 Mar 83 p 1] 8963

KAZAKHSTAN SPRING HARVEST--The Kokpektinskaya Steppe is experiencing variable weather these days. But while clouds will frequently cover the entire sky, the long-awaited have still not fallen. Spring harvesting operations are gathering momentum. Now joining the farmers in a shock field work campaign are members of the ideological aktiv. Challenge banners have been introduced for teams and individual workers achieving the best results. Southern winds are now blowing out over the steppe. The turbulent Talmenka rushes noisily down to the boundless fields below. The river's precious moisture will help make the dry steppe lands more generous regardless of the whims of the weather and produce higher yields in the fields here. [By L. Reznikov] [Excerpt] [Alma Ata KAZAKHSTANSKAYA PRAVDA in Russian 15 May 83 p 1] 8963

CSO: 1824/425

SOWING OPERATIONS--Karaganda, 12 May--Machine operators began sowing the grain crops in Central Kazakhstan today. Some 250 complexes and teams are putting this machinery to highly efficient use. They work the soil during the cool part of the day and then seeds covered during the day. Adoption of this agricultural method will make it possible to have simultaneous sprouting over the oblast's entire grain-growing area, which exceeds 1 million hectares. Farmers here have resolved to complete sowing operations within 100 working hours, many fewer than last year. [Excerpt] [Moscow SEL'SKAYA ZHIZN' in Russian 13 May 83 p 1] 8963

HARVESTING, FODDER PREPARATION--Karaganda--Hundreds of hectares of the solo-netz soils on farms in Central Kazakhstan have now begun to make their contribution to the harvest. Fodder preparation personnel have brought in their first crop. Soil reclamation specialists have helped bring formerly unused land into the rotation. They have developed an effective method of freshening the soil here with snowmelt and subsequent applications of more fertilizer. With the adoption of this method, oblast farms now plan to harvest a million more tons of fodder this year than they did last year. [Excerpt] [Moscow GUDOK in Russian 23 Jun 83 p 1] 8963

SPRING SOWING--Karaganda--Farm workers in Central Kazakhstan have begun sowing their grain crops. The first few thousands of hectares of barley have now been put in in Michurinskiy and Tel'manskiy Rayons. Nurinskaya Valley machine operators are putting their equipment into the fields. The sown area in this part of the republic now particularly requires that as much moisture as possible be held in the soil. So farmers here are working the soil with their powerful tractors hitched to cultivators during the cool part of the day and then sowing using erosion-fighting implements during the daytime. This agricultural technique, which has now been adopted by oblast operators, is one guarantee of vigorous early growth. The area sown to spring grain crops exceeds a million hectares. It has been decided to complete sowing operations over this entire territory in 100 working hours. [Excerpt] [Alma Ata KAZAKHSTANSKAYA PRAVDA in Russian 14 May 83 p 1] 8963

EASTERN KAZAKHSTAN SPRING PLANTING--Farms in the Irtysh region have begun to plant their early spring crops two weeks earlier than usual. The Vysokogorskiy and Kolgutinskiy sovkhozes in Kurchumskiy Rayon are planting barley, while Karatal'skiy, Aynabulakskiy and Kenderlykskiy sovkhozes have sent special-purpose grain corn cultivation links into the fields. Extensive introduction of an unregulated system of labor organization is one special feature characterizing this spring harvest season. Brigades were assigned land and equipment; they then concluded labor contracts and tried to achieve maximum yields per unit of sown area. Personnel of Sel'khoztekhnika, Sel'khozhimiya, obvodkhoz [oblast water management administration] and other organizations have become the grain growers' reliable assistants. [By M. Novikov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 21 Apr 83 p 1] 8963

SPRING STORMS IN CENTRAL KAZAKHSTAN--Karaganda--Spring came earlier than usual in Central Kazakhstan this year. The first ten days in May saw the new leaves come out on the trees and the steppe grasses burst into vigorous growth, while by the middle of the month the orchards had begun to blossom. The mercury in thermometers here rose to 30 degrees. But then they plummeted. Pouring rains and driving wind swept through this vast region, wind speeds reaching 25-28 meters per second in some places. None of this boded good. And so it has turned out. Nighttime temperatures in some rayons have fallen as low as minus 3-8° accompanied by raging snowstorms. The rampaging elements have destroyed the blossoms on orchard fruit trees and berry bushes, cold temperatures blackening the leaves on new plants in parks and squares. Sowing operations in Karaganda Oblast have been brought to a halt. Sheep farms, now in the midst of their lambing season, could have suffered heavy losses. Fortunately, however, this didn't happen. Oblast stockmen received advance warning of the storm and were prepared for their encounter with the elements. According to what we have been told by the Karaganda hydrometeorological observatory, this weather phenomenon was the product of a cyclone forming over the region around Sverdlov and the descent of cold air masses from the Arctic Ocean. [By V. Bugayev] [Text] [Moscow TRUD in Russian 25 May 83 p 4] 8963

BUCKWHEAT SOWING--Pavlodar--Oblast farmers began planting their buckwheat yesterday. They are planting by the broad-row method, which will allow them to cultivate their crop efficiently with their machines and implements. [Excerpt] [Moscow TRUD in Russian 31 May 83 p 1] 8963

PLATOONED SOWING--Pavlodar--Machine operators in Pavlodar Oblast's Mayskiy Rayon are getting their spring crops in much faster this year than they did last year. Last year Sputnik Sovkhoz got as much as 14 quintals of millet per hectare and sold the state more than two plans' worth of grain. They are counting on being able to do even better this year. The powerful Kirovtsy are performing reliably. Two crews have been assigned to each planter. This method permits planting to continue throughout the daytime hours. Crews replace one another every three to four hours. "The brigade method has become standard procedure among our sowers," pointed out G. Stolbov, head of Mayskiy Rayon's agricultural administration. "More than 20 teams [zveno] are using this new method in their millet-sowing operations, millet accounting for almost half of our sown area. This has made it possible for them to sow more than 20,000 hectares in less than a full week." [Text] [Alma Ata KAZAKHSTANSKAYA PRAVDA in Russian 18 May 83 p 1] 8963

BRIGADE CONTRACT SOWING--Pavlodar--Eighty-five per cent of the sown area in the Irtysh region is being sown to Omskaya-9 wheat, which in last year's dry weather yielded as much as 8.5 quintals per hectare. S. Gamirullin's brigade grows this valuable crop on the Kolkhoz imeni Lenin. This crack operates by the brigade contract method. These machine operators are sowing 600-700 hectares a day. They add mineral fertilizers to the soil as they go. Their tractors don't stand idle for a minute. They get their seed refills on the move. Equipment operators can rest in the field camps. The soil here has accumulated fairly substantial amounts of moisture and has been well fertilized. Each operator will considerably exceed his shift target. Machine operators on all other rayon sowing teams are following the example of this contract kollektiv. [Text] [Alma Ata KAZAKHSTANSKAYA PRAVDA in Russian 27 May 83 p 1] 8963

LIVESTOCK FEED PROCUREMENT

UDC 635.65.003

PULSE CROP CULTIVATION IN RSFSR

Moscow SEL'SKOYE KHOZYAYSTVO ROSSII in Russian No 6, Jun 83 pp 23-24

[Article by V. Yermakov, deputy chief of the Main Planning-Economic Administration of the RSFSR Ministry of Agriculture: "For the Pulse Crops--Strict Accounting"]

[Text] When a combine operator is losing grain as he harvests, or a truck driver as he hauls the crop, steps are ordinarily taken immediately to correct the situation. The combine or the truck bed is sealed. We are alarmed far less by "invisible" losses, which can be detected only by means of analyses and calculations. We are talking about losses of feed protein.

Lack of attention to the pulse crops (peas, vetch and lupine, as well as soy beans and chickpeas) is just about the main cause of such losses. Their digestible protein content exceeded that of barley by 1.5- to 2-fold or more.

The Kolkhoz imeni Frunze in Belgorodskiy Rayon, Belgorod Oblast, for example, could not achieve the good results it has in its livestock operation without pulse crops. In 1982 1,625 hectares yielded 26.6 quintals of peas per hectare on that farm. Peas accounted for 17 percent of all the grain planted there. This made it possible to balance the protein in the feed, to reduce feed outlays per quintal of pork and the portion of grain in the feed ration. The basic cost for a quintal of weight gain has averaged 99.4 rubles over the past 7 years. The kolkhoz had a net income of 3.6-3.7 million rubles in 1981 and 19⁸². The farm produces more than 5,000 tons of pork and 7,700 tons of milk annually. Each unit of feed used in the livestock operation contained 113 grams of digestible protein.

Good pea crops are harvested on the Zavety Lenina Kolkhoz in Ust-Labinskiy Rayon, Krasnodar Kray (36.6 quintals per hectare on 275 hectares), the Kolkhoz imeni Kirov in Ilyichevskiy Rayon, the Bashkir ASSR (35.2 quintals per hectare from 500 hectares), the Tatarstan Kolkhoz in Buinskiy Rayon, the Tatar ASSR (26.2 quintals per hectare from 4,700 hectares). It is not difficult to understand how important this is when we consider that 20 quintals of peas is equal to 50 quintals of barley with respect to protein content.

Soy beans are raised along the Volga, in the Central Chernozem region and in the North Caucasus. Although this is a fairly new crop for these areas, many of the

farms are learning to cultivate soy beans fairly well. Last year 80 kolkhozes and sovkhozes produced yields exceeding 15 quintals per hectare. The Kubanets Kolkhozes in Timashevskiy Rayon, Krasnodar Kray, harvested 23-25 quintals of soy beans per hectare.

Unfortunately, good yields are not achieved for these crops in many of the places where they are grown. Growth rates for output of livestock products lag behind rates of increase in feed consumption. While milk production was 23.8 percent greater during the period 1976-1980 than for the 8th five-year period, feed consumption (in feed units) for milk production increased by 39.1 percent. There has been a similar trend in meat production. An average of 1.4 feed units was used to produce a kilogram of milk and 9.7 feed units for a kilogram of weight gain in cattle during the period 1966-1970. The corresponding figures for the period 1976-1980 were 1.57 and 11.4.

The planned norm for output of products in animal husbandry was exceeded by 85 million tons of feed (in feed units) during the 10th five-year period. This means that the population was shorted by 12 kilograms of meat and 52 kilograms of milk per capita in a year.

The main causes of the overconsumption of feed is its poor quality and the fact that the rations are not balanced with respect to digestible protein. Because of a reduction in the portion of high-protein crops in the crop structure for grain and feed crops, the nutritional value per feed unit is dropping (Table 1).

Table 1.

Years	Average Annual Gross Harvest (Millions of Tons)		Protein per Feed Unit for Grain Crops (Grams)
	Feed Units	Digestible Protein	
1966-1970	118.0	11.8	99.7
1971-1975	120.7	11.6	96.1
1976-1980	133.3	12.5	93.8

The average gross grain harvest (calculated in feed units) for the Tenth Five-Year Plan was 133.3 million tons. The grain quality was 6 percent lower with respect to digestible protein than for the Eighth Five-Year Plan, however.

During the eighth and ninth five-year periods the farms used up to 2 million tons of pulse crop feed annually. A feed unit of grain and fodder contained 91-92 grams of digestible protein. The protein content dropped to 87 grams during the period 1976-1981. This is precisely the cause of the imbalance in the rations and the overconsumption of feed (Table 2).

Those kolkhozes and sovkhozes on which the quality of the feed remains poor are ordinarily slow in adopting progressive feed production technology. The nutritional value of the feed is below standard because of violations of the requirements for laying in hay, haylage and silage.

More than half of the grass meal produced by many kolkhozes and sovkhozes in Smolensk, Tambov, Orenburg and Novosibirsk oblasts is fifth-grade or substandard,

while an enormous amount of labor and energy is used to produce it. This is hardly justifiable, since the meal is inferior to hay of average quality....

Table 2.

oblast or autonomous republic	Protein per Feed Unit of Grain, Average for a Year (Grams)			Growth of Feed Outlays from 1970 to 1980 (Grams)	
	1966-1970	1976-1980	+,- for the 10 years	For Milk	For Beef Weight Gain
Bryansk	95.9	85.5	-10.4	113	143
Orrel	95.1	88.7	- 6.4	107	129
Ryazan	96.6	85.4	-11.2	108	125
Mordovian ASSR	104.5	89.1	-15.4	118	145
Chuvash ASSR	105.5	92.8	-12.7	108	124
Nipetsk	97.4	89.9	- 7.5	109	120
Saratov	96.9	90.6	- 6.3	127	143
Sverdlovsk	106.4	91.4	-15.0	114	113
Amur	103.9	93.1	-10.8	115	128

It is urgent that we resolve the protein problem, primarily by increasing the production of pulse crops. In order to meet the national economic needs, the gross pulse crop harvest is to be increased to 20 million tons within the near future. More than half of this will be produced in the Russian Federation. By the end of the eleventh five-year period the republic's kolkhozes and sovkhozes are to be producing at least 9 million tons of pulse crops.

Why is the question of pulse crops so acute? Because they make it possible to obtain the largest quantity of protein from a hectare of land. Pulse crop protein is the least expensive. The cost of digestible protein contained in peas is far less than that of protein from cereal grains. Table 3 contains data on the yield for the main grain crops of the USSR in terms of digestible protein.

Table 3.

Crop	Average Annual Yield in Terms of Digestible Protein (quintals per hectare)				
	1966-1970	1971-1975	1976-1980	1981	1982
Grains (averaged)	1.58	1.55	1.72	1.20	1.58
Pulse crops	2.58	2.26	2.38	1.26	2.26
Corn	1.86	1.86	2.18	1.70	2.67
Wheat	1.84	1.87	2.08	1.58	1.89
Rye	1.13	1.22	1.25	1.10	1.49
Barley	1.21	1.21	1.23	0.92	1.20
Oats	1.14	1.07	1.15	0.78	1.21

Peas are the main pulse crop in many zones. The plant breeders have now developed new, high-yield varieties--"Neosypayushchiysya-1," "Mironovskiy-186," "Uladovskiy-10," "Zelenozernyy-1," "Ul'yanovskiy-72," "Krasnoufimskiy" and "Solyanskiy." They are suitable for machine-harvesting and are good predecessors for grain crops. Industry has begun providing agriculture with more pulse crop harvesters, which is making it possible to significantly expand the production of peas, vetch and other pulse crops.

The kolkhozes and sovkhozes in many regions are clearly not raising enough pulse crops, however. The area planted to pulse crops has been reduced in recent years by farms in the Central region, where they account for only 1.1 percent of the crop structure. Pulse crops account for less than 1 percent in the crop structures of Kirov, Volgograd, Saratov and Perm oblasts.

Chickpeas, a pulse crop, are highly important for the arid regions of the North Caucasus, the Volga region, the Southern Ukraine and Siberia. The varieties previously developed did not produce high yields and had no marked advantage over wheat or barley with respect to protein yield per hectare. The development of the "Krasnokutskiy-123" variety in Saratov Oblast is forcing a change of attitude toward chickpeas. The average "Krasnokutskiy-123" yield was 29.2 quintals per hectare at the Pugachev Strain Testing Section in 1978-1982, and the maximum, harvested in 1981, was more than 40 quintals. Tests conducted during that same period produced 35.9 quintals of barley per hectare and 32 quintals of soft spring wheat. This means that the chickpeas produced 6.63 quintals of digestible protein per hectare, while wheat produced only 4.48 quintals and barley only 2.91. Chickpeas have non-lodging stems, they are early-ripening, the lower seeds are firmly attached, and they can be harvested with conventional grain harvesters. Chickpeas are an excellent predecessor for spring wheat, enriching the soil with nitrogen. It is apparent that the scientific institutions need to expand the breeding and strain testing work being performed with this crop and to accelerate the reproduction of seed from the high-yield varieties.

In order to improve the protein balance in the feed, we must increase the content of digestible protein in the coarse and succulent feeds. We know that feed crops, especially perennial legumes, have great potential for developing green mass. This feature places them above the other crops in many economic regions of the Russian Federation. Studies have shown that hay made of leguminous grass contains twice as much digestible protein as hay made from grass crops. Unfortunately, the area planted to leguminous grasses for mowing had been reduced by 800,000 hectares at the beginning of 1983, compared with the tenth five-year period, and the portion of perennial grasses accounted for by these dropped from 66 to 57 percent. Furthermore, half of this area is occupied by old grasses, from which the harvest is at least one third less.

The RSFSR presently has a total of 83 million hectares of natural feed-production land, and we need seed in order to enhance its productivity. There is a considerable shortage of grass seed. It is true that in recent years greater attention has been given to seed production for the perennial legumes, especially alfalfa. Last year many farms harvested good crops of seed for alfalfa, clover and other crops. The Otradnenskiy Sovkhoz in Saratov Oblast harvested 3 quintals of alfalfa seed from each of 150 irrigated hectares, for example, and the Krasnoye Znamya Kolkhoz in Velikolukskiy Rayon, Pskov Oblast, harvested 2 quintals of clover seed per hectare on 100 hectares.

We should be prepared to invest adequate capital to accelerate the development of seed production for grass crops. These outlays will more than pay for themselves in increased fertility of the soil and increased output from the livestock operations.

Winter and spring rape has been extensively grown in recently years. It is mainly grown for feed. The value of this crop lies in the fact that its seeds contain 40-50 percent fat and 21 percent protein. A kilogram of ground seed contains almost twice as much protein as a kilogram of pea flour, but less than soy. A hectare of rape can produce 15 to 20 or more quintals of seed and 40 to 60 tons of high-protein green mass, which is used for the supplemental feeding and pasturing of livestock, for the preparation of silage and for processing into pellets and grass meal. Rape, which can be cultivated almost anywhere, can be used to supplement the protein balance of the feed for the farms of those rayons in which many of the high-protein crops are not grown or are grown on a limited scale.

It is the task of every kolkhoz and sovkhoz this year to create the necessary stocks of seed for peas, vetch, alfalfa, lentils, chickpeas, lupine and other crops and to fulfill the plans established for their procurement. The experimental production farms should accelerate the reproduction of promising varieties of soy beans, pulse crops and grasses.

Everything is important in the resolution of the protein problem. By making use of all reserves for increasing its production and by making thrifty use of it, we can improve the feed balance in animal husbandry and increase the productivity of the livestock and poultry.

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LIVESTOCK FEED PROCUREMENT

FORAGE HARVEST OVERVIEW PUBLISHED

PM081327 Moscow SEL 'SKAYA ZHIZN' in Russian 22 Jul 83 p 1

[USSR Ministry of Agriculture "Agricultural Review": "More Coarse and Succulent Feed"]

[Excerpts] Rural workers have many concerns at the moment. With each day the grain harvesting is expanding, work caring for the crops is continuing, and the harvesting of the early vegetable and fruit crops is under way. One of the chief and most important concerns is feed procurement.

In the current year a good crop of grasses, the development of which is in many regions 2-3 weeks ahead of normal schedule, has been grown almost everywhere. The prevalent conditions everywhere demand high work rates in harvesting the grasses and procuring fodder.

According to USSR Central Statistical Administration data, by 18 July kolkhozes and sovkhozes had cut sown and natural grasses on 51.8 million hectares, 671 percent of the plan; had procured 32 million metric tons of hay, 58 percent of the plan, and 45.1 million metric tons of cured hay, 68 percent of the plan; and had produced 3.9 million metric tons of grass meal and other artificially-dried green fodder, 46 percent of the plan. Compared with this same period last year, 13.4 million metric tons of extra hay, 8.3 million metric tons of extra cured hay, and 581,000 metric tons of extra grass meal had been procured.

The farms of the Ukraine, Belorussia, Lithuania, and Moldavia have virtually finished cutting the first crop of grasses. The kolkhozes and sovkhozes of the Latvian SSR, the Lithuanian SSR, the Estonian SSR, and the Bryansk and Moscow Oblasts have overfulfilled and fulfilled the hay procurement targets; and the Kirghiz SSR, the Tajik SSR, the Lithuanian SSR, the Belorussian SSR, and the Tatar ASSR have overfulfilled and fulfilled the targets for laying in cured hay.

Particular attention must be paid to feed quality during its procurement. The main thing here is to precisely observe the techniques of preparing feed and ensure appropriate storage for it. According to USSR Central Statistical

Administration data, by 1 July 8.7 million metric tons of procured hay had been tested, of which 85 percent was placed in classes I and II, low-grade [neklassnyy] hay amounting to 3 percent. A particularly large proportion of the hay crop in the Armenian SSR and Vladimir, Ivanovo, Kalinin, Gorkiy, Kirov, Kurgan, Novosibirsk, and Ulyanovsk Oblasts is low grade. The kolkhozes and sovkhozes in these oblasts prepare hay from overripe grasses--the cut grass lies for a long time in the field, it gets soaked by the rain, active ventilation during grass drying is not carried out, and appropriate attention is not paid to building feed storage depots. A considerable proportion of the total amount of grass meal procured in the farms of the Kostroma, Sverdlovsk, Kemerovo, and Tyumen Oblasts is of low quality. The farms often receive the results of analyses with delay and are not able to use them to promptly eliminate violations of feed preparation techniques.

The progress of feed procurement in individual republics is shown by the following data (expressed as percentages of the plan):

<u>Union republics</u>	<u>Natural and sown grasses</u>	<u>Hay</u>	<u>Cured hay</u>
RSFSR	55	51	53
Ukrainian SSR	99	82	73
Belorussian SSR	96	98	104
Uzbek SSR	84	62	136
Kazakh SSR	56	55	66
Georgian SSR	25	11	83
Azerbaijan SSR	72	54	89
Lithuanian SSR	103	112	117
Moldavian SSR	99	29	78
Latvian SSR	89	113	97
Kirghiz SSR	59	29	124
Tajik SSR	88	59	117
Armenian SSR	37	24	76
Turkmen SSR	88	50	92
Estonian SSR	76	108	95

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LIVESTOCK FEED PROCUREMENT

STATUS OF LIVESTOCK FEED SUPPLY IN ESTONIA

Tallinn SOVETSKAYA ESTONIYA in Russian 30 Jun 83 p 2

Article by V. Aasmyae, senior scientific associate of the Institute of Economics of the Estonian SSR Academy of Sciences, candidate of economic sciences: "Taking All Aspects Into Account"

Text In the article by V. Sergeyev entitled, "Efficient Utilization of Diary Protein" (SOVETSKAYA ESTONIYA, 15 May of this year) it says that in 1980 the republic animal husbandry used dairy protein for feeding livestock in an amount that exceeded the norm 1.4-1.7-fold. It must be noted that the normatives presently in effect (approved in December, 1981) are somewhat higher than those which the author used in his calculations. But even according to these increased normatives, there is still an expenditure in a number of cases.

But it does not seem to us that this is the essence of the situation. It lies in the fact that the present practice itself sometimes forces even the best farms not to observe the rigid "optimal" (and these are precisely the ones V. Sergeyev defends) norms for the expenditure of dairy protein for feeding calves and piglets. An analysis of the annual reports has shown that even on such kolkhozes as Estoniya and 9 Maya, the actual expenditures of dairy protein are higher than, as it were, the desired rigid ones which so far are still only a dream. And there are many reasons for this. They include the organizational policy: for example, the seasonal delivery of that same dry skim milk (to which V. Sergeyev also draws attention) is poorly regulated.

Moreover, agricultural specialists know that it is possible to successfully reduce the expenditure of dairy protein in animal husbandry to the established minimum only when there is a sufficient quantity of effective replacements for it--nutritive yeasts and lysine. So far there is a good deal that has not been regulated here either. There is a shortage of protein feeds. The farms--and to some degree with reason--are afraid of any reduction of the dry milk returned to them because under present conditions, along with other unfavorable factors, this could be reflected in the weight gains of the young animals and in meat production.

Hence, it seems to us, the main conclusion follows: to solve the problem of efficient utilization of dairy protein is possible only comprehensively, taking into account all aspects of the feed protein problem.

Certain points in V. Sergeyev's article seem useful in this connection. Support should be given, for example, to his suggestion concerning the creation of seasonal supplies of dry skim milk. We hope that the republic Ministry of the Meat and Dairy Industry and Ministry of Procurement will solve this problem.

We also support V. Sergeyev's point about the establishment of effective control over the utilization of dairy protein. For our part we suggest inter-departmental control over the quality, prompt allotment and utilization of whole milk substitutes, dried milk, whey, starter feeds and other feeds.

The republic does have reserves for increasing feed protein resources. But without the help of a number of departments which so far are not formally a part of Agroprom, many problems of balancing the feed ration cannot be solved. The more so since the goals earmarked by the Food Program require accelerating a number of measures.

Let us make certain constructive suggestions here, hoping that they will find all possible support in the corresponding departments.

The Kuusalu kolkhoz has developed technology for enriching whey with protein. But it can enrich only 6,000 tons, and a total of 100,000-120,000 tons of whey are returned to the kolkhozes and sovkhozes from the dairy industry. To enrich all of it would mean to obtain about 2,000 additional tons of feed protein, that is, to provide protein for approximately 80,000 calves. We expect support in this from the Estonian SSR Ministry of the Meat and Dairy Industry.

A significant reserve of animal protein in the republic is fish byproducts. The stores in the meantime are offering us large quantities of fish that have not been dressed--and we have to throw away the heads, tails and innards. As a rule, feed that is valuable for livestock is thrown away. The USSR Ministry of the Fish Industry, as LITERATURNAYA GAZETA recently noted, has still not taken measures to increase the output of dressed fish. But still local initiative is possible! I should like to hear what the Estonian republic union of fishing kolkhozes and the fishery administration can do.

Great efforts are now being made to increase the production of vegetable proteins. The areas planted in pulse crops are being expanded. New crops that are rich in protein have appeared on the fields of the republic. Thus 7,500 hectares were planted in rape this year, and in 1985 it is intended to plant twice as many. The production of leaf protein concentrate is developing. The first shop in the republic (at the Pyarnu interkolkhoz hog farm) has been in operation for several years. At the present time these shops are being constructed on many farms. The largest of them on the Vyayke-Maar'ya Kolkhoz, will go into operation this year.

The mobile variant of this technology is interesting. It involves breaking up the green mass directly in the silage pits: the solid press mass is placed immediately in the pits and the juice is shipped to the shop for processing. This eliminates extra expenditures on shipping the mass to the place of processing and pollution of the territory with silage juice is reduced. And the

silage juice produces an additional quantity of protein for feed. The main aggregate in the installation for breaking down the green mass is one of the varieties of a disintegrator. In our opinion it would be expedient for the Dezintegrator SKTB to take on the responsibility for fitting out this kind of mobile installation.

Every department involved must make its contribution to successfully solving the problem of producing feed protein. This work should be headed by the recently created Estonian SSR Agroprom.

11772
CSO: 1824/446

LIVESTOCK FEED PROCUREMENT

MOSCOW TV ON PROTEIN FEED ADDITIVES

LD072353 Moscow Domestic Television Service in Russian 1300 GMT 7 Aug 83

[From the *Vremya* newscast; video report by L. Voznesenskiy--screen caption identification]

[Text] The CPSU Central Committee Politburo recently examined the question of the further development of the industrial production of protein and other feed additives for the needs of livestock farming.

Hello comrades. The question examined by the Politburo has, without any exaggeration, very great economic significance. Here is just one example. In 20 years, from 1962-81, egg production increased by 6.9 times, while the consumption of feed rose by only 2.3 times, that is, allow me to point out, 3 times less.

In that same time, previously the average chicken laid 91 eggs per year, and now--206. Science asserts and practice shows that such large improvements have become possible largely thanks to the improvement of the feed base of poultry farming, with ordinary grain being replaced by balanced mixed feeds. It is precisely the use of balanced, full value feed, balanced above all as regards protein, which means that the average daily increase in weight in livestock can be increased by one-and-a-half to two times; that the consumption of feed per unit of production can be reduced by a third; that the time for fattening can be significantly reduced; that is, in other words, raising the efficiency of livestock farming and its return by a great deal.

The growth of production of protein and other very valuable and even irreplaceable additives for animal feeds--vitamins, macro and micro-elements, antibiotics, and other biological active substances, will mean that throughout the country as a whole, the consumption of grain for the needs of livestock farming, can be reduced each year by many millions of metric tons; that the output of meat, milk, and other products that are so necessary in the country, can be increased. By taking such paths we will eliminate the shortage of feed protein in the country, of course increasing the production of proteins of vegetable origin. Much still remains to be done, from expanding sown areas of high-protein feed crops, soya, peas, rape, and other crops, to the creation of modern, highly productive feed harvesting and processing equipment and technology. This is the first task for this work; the second is the expansion of production and the more

rational use of proteins of animal origin. Here much needs to be done. In particular more fully processing the waste from the meat and milk, fish, and food industry. The third task is a significant increase of production of feed protein of microbiological origin. Such proteins can be produced from non-agricultural resources. For example it can be based on paraffins, and even on the waste from the timber-cutting, wood-processing, pulp and paper industry, as well as agriculture, for example. These proteins can be produced in any, even the most distant region of the country, in any weather, as long as there is the initial material, the power and the technology. Although all this will cost no small amount, the resulting effect is very high. For this reason the state is prepared to spend such amounts for the sake of expanding the production of this category of feed proteins.

In general, protein for animals--this, in the final analysis, is meat, milk and butter and other high quality products in the amount necessary for the uninterrupted supply of the country's population. And the examination of these questions in the Politburo, the decisions adopted, again and again show that the measures connected with the implementation of the food program, as was stressed at the November CPSU Central Committee Plenum, occupy a central place in our plans.

CSO: 1824/523

LIVESTOCK

UDC 631.811+637.14

INCREASING EFFECTIVENESS OF USSR'S DAIRY INDUSTRIAL SUB-COMPLEX DISCUSSED

Moscow VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI in Russian No 5, May 83 pp 51-65

[Article by V. A. Dobrynin, Agricultural Academy imeni K. A. Timiryazev, Moscow; and corresponding member of the Academy of Agricultural Sciences imeni V. I. Lenin]

[Text] An important role in the country's agro-industrial complex is played by the dairy industry sub-complex, which has been called upon not only to increase milk production, but to improve significantly its utilization. The 11th Five-Year Plan calls for an increase in milk production of almost 6 percent, and there are plans to bring the average annual output to 97-99 million tons; in the 12th Five-Year Plan, the average annual production should reach 104-106 million tons.

In the 10th Five-Year Plan, the average annual volume of milk production was 92.6 million tons, or 356 kg per capita. The Soviet Union is first in the world in gross milk production, and provides 22 percent of all the milk produced in the world. Nonetheless, we fall behind a number of developed countries in terms of per capita consumption of this food product. We meet only 77 percent of the medically-based norm set for the population's requirement for milk and dairy products. In the 10th Five-Year Plan the average annual milk consumption did not increase, but rather decreased by 2 kg; this can be explained by a decline in the rate of growth in milk production, which was 0.2 percent, compared to 1.7 percent in the 9th Five-Year Plan.

Extensive factors predominated in the 10th Five-Year Plan in the development of this sector: the cow population increased by 4.3 percent, but milk production decreased by 1.0 percent; and the average annual milk yield per cow in the nation's farms declined from 2367 to 2159 kg. The yield of calves per 100 cows did not exceed 80 percent. Due to the decrease in milk yield, there was a 6.1 million ton shortfall in milk production; however, in some areas they are trying to make up for this shortfall not through intensification of the sector, or by increasing its quality indicators, but by expanding the livestock herd. This will not have positive results. In the RSFSR, with a 2.3 percent increase in the cow population over a 6 year period (1976-1981), there was a 2.6 percent decrease in milk production. In the Ukraine the herd grew by 3.3 percent, but the volume of milk obtained dropped by 0.8 percent. In Belorussia there was a 3.7 percent increase in the number of cows, and milk production decreased by 5 percent.

Especially alarming are the extremely high labor costs in this sector of animal husbandry, which, in spite of the increase in equipment deliveries, did not decline in the 10th Five-Year Plan. An increase in wages paid to farm workers was not accompanied by a corresponding increase in labor productivity; a rise in expenditures on feed, amortization and repair of equipment led to a significant increase in milk production costs. In the 10th Five-Year Plan the production cost of milk at sovkhozes rose by 25 percent and reached 30.8 rubles per quintal. Over half of the sovkhozes spend 38 rubles or more on 1 quintal of milk. Costs at kolkhozes grew by 32 percent and reached 28.7 rubles per quintal (see table 1).

In spite of the multiple increases in the purchase price of milk (the average purchase price per 1 ton of milk in 1980 represented a 2.4-fold increase over the 1965 price), dairy farming has been operating at a loss all these years. In 1980, 64 percent of the sovkhozes and 72 percent of the kolkhozes did not cover their expenses tied to the production of milk. The total losses were almost double those suffered in 1970. Kolkhoz and sovkhoz expenditures on milk production now exceed retail prices, and if one adds on the state's expenditures on procurement, transport, storage, processing, and sale of marketable milk, the total costs far exceed the receipts from sales. The state is forced to allocate billions of rubles as subsidies to the USSR Ministry of Meat and Dairy Industry to cover the losses. But these sums are actually subsidies for the consumers, which increase even further the gap between the effective demand and the supply of dairy products. Covering the sector's losses does not stimulate improved operation of either dairy animal husbandry or of the dairy industry. The largest proportion of losses occur in the farms of the RSFSR. Kolkhozes and sovkhozes in the Non-chernozem region, where dairy animal husbandry is the leading sector, are in a particularly difficult situation. A situation in which the primary sector does not provide any savings cannot be considered normal; it contradicts the essence of specialization and expanded reproduction.

There are serious problems also in the utilization of the milk that is produced. An unjustifiably large proportion of the milk remains at the farms, where it is used primarily for fodder purposes. In 1980, 12.6 million tons of whole milk; 22.4 million tons of skim milk and churned cream; and approximately 8.3 million tons of buttermilk were used for this. In other terms, this is equal to 26.6 million tons of whole milk, or 29 percent of its gross production. The use of milk for feeding young animals at kolkhozes and sovkhozes exceeds zootechnical norms by a factor of 1.5-2.5; and the use of skim milk exceeds the norms several-fold. At the same time, our norms for the feeding of young animals have been overestimated without foundation. The use of milk for fodder purposes relative to the amount produced in the USSR is considerably higher than that in Denmark, the United States, the Netherlands, and England (see table 2).

The accounting and utilization of milk resources in the dairy industry is not adequately organized. The balance of milk for processing is calculated only on the basis of milk fat, which represents just one-third of the product's dry substances. This leads to great losses of valuable food components: in 1980

for example, approximately 85 percent of the milk fat, 60 percent of the protein, and 58 percent of the milk sugar were used for fodder purposes.

Table 1. Results of the sale of whole milk and dairy products converted to milk, 1981

Republic	<u>Sovkhozes</u>			<u>Kolkhozes</u>		
	Production cost, rub.	Purchase price, rub.	Level of profitability (or loss), percent	Production cost, rub.	Purchase price, rub.	Level of profitability (or loss), percent
RSFSR	34.8	31.4	-9.7	33.2	29.2	-12.1
UkSSR	27.3	25.3	-7.4	27.1	24.8	-8.7
BeSSR	29.6	28.0	-5.4	28.6	28.0	-1.8
UzSSR	33.0	30.5	-7.6	28.8	32.2	+11.6
KaSSR	31.3	29.7	-5.1	29.7	31.1	+4.6
GSSR	39.6	35.9	-9.3	43.2	36.1	-16.6
AzSSR	34.5	35.2	+1.8	33.3	35.9	+7.8
LiSSR	27.9	29.4	+5.4	26.1	29.0	+11.1
MSSR	31.2	27.8	-10.9	29.6	27.9	-5.6
LaSSR	27.9	28.1	+0.8	27.4	28.3	+3.3
KiSSR	32.9	31.7	-3.5	28.4	32.5	+14.2
TaSSR	34.7	33.2	-4.4	31.9	32.3	+1.0
ArSSR	33.5	33.2	-0.8	32.5	33.3	+2.7
TuSSR	34.4	33.1	-4.0	30.3	32.3	+6.6
ESSR	24.4	31.1	+27.4	24.4	31.4	+29.0
USSR	32.7	30.2	-7.7	30.2	27.9	-7.7

Table 2. Production and utilization of milk in several countries of the world, 1979

Country	Milk production, thousands of tons	Percent of total production used:		
		In whole form	Processed into dairy products	For Livestock feed
Australia	5,642	29.4	70.6	0.1
England	15,340	48.1	51.4	0.5
Netherlands	11,580	16.2	82.8	1.0
Denmark	5,235	15.5	82.1	2.4
FRG	23,800	14.4	81.5	3.8
Sweden	3,391	39.5	58.2	2.4
Canada	7,675	36.0	58.7	5.3
USA (1980)	57,887	40.7	58.1	1.2
USSR (1980)	90,630	37.6	48.6	13.8

A shortage of capacities for complex processing of milk for food purposes, for drying milk, skim milk, and buttermilk; and a shortage of equipment for making cheese and other products contribute to the poor product assortment. There is an extremely low proportion of processing of by-products of butter-making--skim milk, churned cream, and buttermilk. Only one-third of the skimmed milk and approximately one-sixth of the buttermilk are processed into valuable food products; the rest is returned to farms for use as fodder, and sometimes it is even irretrievably lost. The skimmed milk and buttermilk are turned into free

todder. A ton of skimmed milk is returned to kolkhozes and sovkhozes at a price of 10 rubles; and buttermilk is returned essentially free of charge. The prices for skimmed milk and buttermilk established in 1961 have not changed once, even though purchase prices for milk have increased at several different times. The production cost for a feed unit of skimmed milk and buttermilk is a fraction of the production cost for the cheapest types of feed; this does not help economize on milk raw materials or in the organization of waste-free production.

Possible options for the development of dairy animal husbandry in the future. Correcting the current situation in the dairy industry sub-complex is a matter of great state importance. We will dwell on the justification for developing animal husbandry on an intensive basis. This justification is needed even more because the party's line on this issue is often not sustained in practice for the sake of premature, short-term gains.

In animal husbandry, as in no other sector, the intensive method of expanded reproduction is characterized by an increase in the animals' productivity and in the quality of milk and meat; it is expedient to combine this with the extensive method--increasing the herd and expanding the area of land used for fodder cultivation, since any growth in herd size theoretically should not prevent an increase in its productivity. However, with the same productivity, the increase in the animal population should be accompanied by an increase in the area used for fodder or an increase in its yield. But if an increase in milk yield and an increase in milk quality is planned, then the development of the feed base must exceed the increase in the herd by a significant degree. Under current conditions, when expansion of the fodder area within the crop rotation pattern in the majority of regions of the country is not possible, and fodder production constantly has been falling behind the demands of animal husbandry, it is unreasonable to talk about further expansion of the herd. Inevitably this will be reflected in the meat and milk productivity of the animals, and in product quality.

The planning of an increase in the cow population under conditions of feed shortages gives rise to false high indicators. At some farms, for the sake of obtaining an indicator of a profitable herd, at the end of the year an excessive number of livestock with low productivity are subject to immediate rejection and elimination. This kind of "resolution" of the problem costs farms and the state a great deal.

The very physiology of the animals, who use the majority of their feed not for production but for sustaining life, speaks in favor of the intensive method of development in animal husbandry. This is a constant value in relation to the number of cows, but it is inversely proportional to productivity. With an average annual milk yield of 3000 kg, the proportion of maintenance feed is approximately half of the total consumed. The larger the herd and the lower the productivity, the greater the proportion of feed used just to maintain the animals. This part of feed expenditures per unit of production can be reduced only by increasing the average annual milk yields, and by increasing milk production by taking a rational approach to expanding the herd itself.

It is very important, of course, for the herd to have a high genetic potential for productivity. And with a feed shortage, only an average of 65-75 percent of the hereditary productivity capabilities of dairy cattle can be utilized. Even in Moscow Oblast, where the feed base is the most stable, the actual milk yield from cows is approximately 78 percent of their genetic capability at kolkhozes, and only 68 percent at sovkhozes. Only about half of the meat potential of cattle is realized. In 1981, we produced 58 kg of beef per head of cattle; this figure was 77 kg in the GDR, 83 in Bulgaria, 101 in Hungary, 114 in the FRG, and 115 in Italy. Under the proper conditions, primarily those involving feed, the genotype of the majority of our livestock is capable of producing 3000-4000 tons of milk per year and about 100 kg of meat per animal.

What relationship between animal population and productivity is the most efficient, with the available resources, for obtaining an average of 98 million tons of milk per year in the 11th Five-Year Plan? Three acceptable variations were taken for comparison: the first was a population of 35.0 million cows with an average annual milk yield of 2800 kg; the second was a population of 32.7 million cows, with productivity equal to 3000 kg; the third was a population of 28.0 million with a milk yield of 3500 kg (see tables 3 and 4). The analysis was done using economic and mathematical methods--the simplex method and optimization. An electronic computer was given a problem that involved not only limitations set by existing material resources, but also expenditures on the intensification of the fodder base; possible increases in ration costs; improved feeding, care, and maintenance of highly productive animals. These expenditures, as it is known, can be so high that they cannot be recovered in one year. Nonetheless, resolution of the problem using an extreme function according to the minimum expenditures showed that the third variation is the most profitable: expenditures on milk production are lowest with an average annual yield of 3500 kg and a population of 28 million cows. Expenditures on increasing yields from fodder crops, optimization of the structure of fodder areas and rations, improvement of the animals' veterinary condition, are recovered fully and even with some surplus by eliminating the 15.4 million excess cows from the herd. This population should be used for intensive meat production--part of the animals should be replaced by beef cattle breeds, industrial cross-breeding and fattening should be utilized, and so on.

An increase in the efficiency of the dairy and meat industry is tied very closely to expanding the division of labor among these subsectors. A clearly defined intra-sectorial specialization in animal husbandry will make it possible to improve more purposefully the technology of livestock maintenance in conformity with the type of productivity; it will be possible also to carry out pure-strain breeding work more effectively, that will be specific for beef and dairy breeds; and to increase milk and meat yields more successfully, which will in turn help recover expenditures. Intra-sectorial specialization has a strong effect on the economy of fodder resources, since specialized breeds are much better at paying for their feed with basic production. Finally, specialization in livestock breeding is also necessary for improving the distribution of the sector throughout the country. Breeding livestock for meat requires less capital than does dairy cattle farming. It can be distributed more broadly throughout southern regions, so lighter, and therefore less expensive livestock facilities can be built.

Table 3 Variations for the development of dairy animal husbandry
 Goal: Production of 98 million tons of milk per year with minimum
 material and monetary expenditures for fodder production

Indicator	Productivity Variations						
	Milk yield of 2800 kg/cow per year	Milk yield of 3000 kg/cow per year	Milk yield of 3500 kg/cow per year				
Bil. of feed un. Cow pop. of 35 million	Mil. of feed un. Cow pop. of 32.7 mil.	Per- cent	Bil. of feed un. Cow pop. of 28 mil.	Mil. of feed un. Cow pop. of 28 mil.	Per- cent		
Feed demand							
Total	109.6	100	107.8	100	105.0	100	100
Concen- trates	28.0	25.4	25.6	27.2	24.4	25.2	28.8
Coarse, total	27.1		24.6	26.9		25.0	23.9
Hay	22.2	52.8	20.2	22.0	52.4	20.5	19.1
Straw	4.9	24.5	4.4	4.9	24.5	4.9	4.8
Succulent, total	21.6		19.7	21.3		19.8	18.9
Silage	16.4	82.0	14.9	16.2	81.0	15.0	15.7
Root- crops	3.3	30.0	3.0	3.2	29.1	3.0	3.1
Green, total	32.9	156.7	30.0	32.3	153.8	30.0	31.5
Material and monetary expendi- tures, total in mil. of rubles	6196		6128			5882	
Per ton of feed units, rubles	56.5		56.8			56.0	
Labor input, total man- hours	1157		1145			1091	
Per ton of feed units, man-hours	10.6		10.6			10.4	

Table 4 Providing feed to dairy animal husbandry under the three variations for development of the sector

<u>Indicator</u>	<u>Avg. annual milk yield of 2800 kg/cow</u>			<u>Avg. annual milk yield of 3000 kg/cow</u>			<u>Avg. annual milk yield of 3500 kg</u>		
	<u>Mil. hect.</u>	<u>Mil. tons</u>	<u>Bil. feed un.</u>	<u>Mil. hect.</u>	<u>Mil. tons</u>	<u>Bil. feed un.</u>	<u>Mil. hect.</u>	<u>Mil. tons</u>	<u>Bil. f.u.</u>
Meeting the demand with:									
Barley	13.24	24.8	26.7	12.4	23.2	25.0	13.67	25.6	27.6
Legumes	1.08	1.30	1.2	1.08	1.3	1.2	1.08	1.3	1.2
Hay	--	52.8	22.1	--	52.5	22.0	--	45.5	19.1
Straw	--	27.5	4.9	--	24.5	4.8	--	23.8	4.7
Silage	10.07	82.0	16.4	9.92	81.0	16.2	9.65	78.5	15.7
Root-crops	1.31	30.0	3.3	1.29	29.1	3.2	1.25	28.2	3.1
Perennial grasses	7.36	90.9	15.0	7.73	95.5	15.0	5.67	70.0	11.0
Hay-cuttings (green yield)	15.0	21.0	4.4	15.0	21.0	4.4	15.0	21.0	4.4
Pasture grazing (green yield)	54.8	156.7	32.9	53.9	153.8	32.3	52.5	150.0	31.5
Food by-products	--	21.0	1.9	--	21.0	1.9	--	21.0	1.9
Percent of total land used for fodder production	32.7			32.1			31.0		

Table 5 Variations for the development of dairy animal husbandry
 Goal: Production of 98 million tons of milk per year using the least possible area of land for cultivation of fodder crops

Indicator	Cow pop. of 35 mil., avg. ann. milk yield of 2800 kg per cow			Cow pop. of 32.7 mil., avg. ann. milk yield of 3000 kg per cow			Cow pop. of 28 mil., avg. ann. milk yield of 3500 kg per cow		
	Bil. of feed units	Mil. of tons	Per- cent of total	Bil. of feed units	Mil. of tons	Per- cent of total	Bil. of feed units	Mil. of tons	Per- cent of total
Feed demand, total	109.6		100	107.8		100	105.0		100
Concen- trates	33.9	30.8	30.5	33.4	30.4	31.0	32.5	29.5	31.0
Coarse, total	16.4		15.0	16.1		15.0	15.0		15.0
Hay	11.5	27.4	10.5	11.3	26.9	10.5	11.0	26.2	10.5
Straw	4.9	24.5	4.5	4.9	24.5	4.5	4.7	23.8	4.5
Succulent, total	24.4		22.3	23.9		22.2	23.3		22.2
Silage	19.8	99.0	18.1	20.1	100.5	18.7	17.9	89.5	17.1
Root- crops	4.6	41.8	4.2	3.8	34.5	5.0	5.4	49.1	5.1
Green fodder, total	42.9	156.7	30.0	32.3	153.8	30.0	31.5	150.0	30.0
Pasture graz- ing	32.9	156.7	30.0	32.3	153.8	30.0	31.5	150.0	30.0
Minimum monetary expendi- tures, millions of rub.	7651		7418			7405			
Per ton of feed unit, rub.	69.8		68.8			70.5			
Labor cost, total									
man-hrs.	1512.3		1384.4			1556.7			
Per ton of feed unit, man-hrs.	13.8		12.8			14.8			

Table 6 Providing dairy herds with pastureland under the three variations for development of the sector

Indicator	Avg. annual milk yield of 2800 kg/cow			Avg. annual milk yield of 3000 kg/cow			Avg. annual milk yield of 3500 kg/cow		
	Mil. hect.	Mil. tons	Bil. feed un.	Mil. hect.	Mil. tons	Bil. feed un.	Mil. hect.	Mil. tons	Bil. f.u.
Meeting the demand with:									
Barley	8.7	16.3	17.6	8.56	16.0	17.3	8.32	15.6	16.8
Legumes	1.08	1.3	1.2	1.08	1.3	1.2	1.08	1.3	1.2
Corn	2.43	7.5	10.1	2.39	7.4	9.9	2.33	7.2	9.6
Hay		27.4	11.5		26.9	11.3		26.2	11.0
Straw		24.5	4.9		24.5	4.9		23.8	4.8
Silage	12.3	99.0	19.8	12.4	100.5	20.2	11.0	89.5	17.9
Perennial grasses	1.48	18.3	3.8	1.34	16.7	3.5	1.19	14.7	3.1
Hay-cuttings (green yield)	15.0	21.0	4.4	15.0	21.0	4.4	15.0	21.0	4.4
Pasture grazing (green yield)	54.8	156.7	32.9	53.9	153.8	32.3	52.5	150.0	31.5
Root-crops	1.86	41.8	4.7	1.5	34.5	3.8	2.14	49.1	5.4
Total land used for fodder production	27.7			27.3			26.1		

In regions with the appropriate natural conditions for beef cattle breeding, the extensive method of development is also effective, and it can be combined with the intensive method depending on the fodder base. In any case, the country's livestock population should be expanded in the future only by increasing the beef cattle herd within reasonable limits. The production of beef to meet the population's demand should be carried out primarily by fattening young animals capable of rapid growth, and of providing a high repayment of fodder and other expenditures.

In terms of the economic efficiency of dairy cattle farming, our calculations for the first and second variations deserve attention as well. They are based on improvement of all qualitative indicators, and in particular, increasing the yield of fodder crops. Depending on the volume of fodder production, each variation can be used to realize the outlined milk production program. Monetary and material expenditures on the dairy herd, even with the minimum productivity option (2800 kg per year) are reduced by 20 percent compared with the actual expenditures (for 1980). The reserve that has been uncovered should be directed toward development of breeding livestock for meat.

Expanded milk production, decreased milk production costs, increased marketability, and improved product quality can be achieved by revealing and putting into operation the sector's internal resources. However, many production problems connected primarily to an increase in technical equipment used in livestock breeding require substantial additional investments. Concrete measures for increasing the sector's efficiency can be reduced basically to the following.

Strengthening the fodder base. An appropriate fodder base must correspond to intensive factors of milk production. A statistical analysis shows that of all the factors affecting milk yield, feeding is the primary one; it accounts for 40-60 percent of all the effects; (10-30 percent of the milk yield can be attributed to the breed and size of the cow population; calf yield per 100 cows represents 3 percent; and other factors account for 7 percent.) However, in economic practice, poor feed quality and rations that are poorly balanced in terms of nutrients, primarily protein, also prevent realization of productivity that is genetically possible.

The animals are forced to compensate for the shortage of certain components in their rations by additional fodder consumption, which leads to overexpenditures per unit of production. In 1980, 1.5 feed units were expended per 1 kg of milk; this included 420 g of concentrates. Compared to the norms, there was a 25 percent overexpenditure of total feed, and a 50 percent overexpenditure of concentrates. The actual expenditure even of available feed per cow with balanced feeding could be met by a productivity of no less than 3000 kg. As a result of the caloric, mineral, and vitamin imbalance of the rations, or in other words, as a result of alimentary factors, losses occurred from dry cows and increased loss of young animals; reduced periods of productivity among cows; and so on. All this resulted in major labor overexpenditures.

The normal proportions of components in the feed represent its full biological value, and good health and high productivity in the animals. Clear

confirmation of this can be seen in the experience of kolkhozes and sovkhozes in the Estonian SSR, where over the last 10 years the average annual milk yield per cow has been 3500 kg; an average of 105.6 feed units are spent per quintal of milk; and at a number of farms, including "Vyzhs'yarve", "Pydrangu", "Vana Aaviku", and others, 90 feed units were spent per quintal of milk. Milch cows are fed taking their productivity into account. The basic summer feed is grass from pastures under cultivation and over 4.5-5 months a cow receives along with this 1500-1800 feed units. The grazing is started in the middle of May, and for the first weeks the cows are provided with supplementary hay and concentrates, the quantities of which are gradually reduced until they eventually are eliminated completely. With this system, the profitability of dairy animal husbandry in the republic does not fall below 27 percent.

Fodder management is well-organized at the Perm Stud Farm. For many years here there have been irrigated, cultivated hayfields and pastures, and fodder is prepared using progressive methods. The cows receive 60-80 kg of varied feed daily: 10 kg of hay; 30 kg of silage; 10 kg of rutabaga; 10 kg of fodder beets; 5 kg of potatoes; 2 kg of carrots; up to 10 kg of distillery grains; and so on. This type of feeding makes it possible to realize the high genetic potential of the animals, which has been achieved through consistent selection work. In 1981 the average milk yield per cow was 5805 kg. The profitability of the sector was over 50 percent. In 1981 there were over 460 kolkhozes and sovkhozes in the country that obtained more than 4000 kg of milk per cow, including 33 pure-strain breeding farms that obtained over 5000 kg per cow; among these were the "Petrovskiy" and "Lesnoye" farms in Leningrad Oblast; "Zarya kommunizma", "Leninskiy luch", and the farm imeni Vladimir Il'yich in Moscow Oblast; "Ploskovskiy" in Kiev Oblast; "Chinaz" in the Uzbek SSR; and "Vyayke Maar'ya" in the Estonian SSR.

Cattle are very sensitive to the proportions in the rations of coarse and succulent feed on the one hand, and in concentrates on the other hand. In this respect, some negative changes took place in the ration pattern in the 10th Five-Year Plan and they are continuing still. By 1980 the expenditure of concentrates increased by 39.4 percent compared to 1976, and there was a corresponding decrease in the proportion of coarse and succulent feed, including pasture grasses. In 1980 an average of only 2.5 kg of hay was expended per cow per day during the indoor maintenance period, instead of the 4-5 kg that is the norm. During the summer period 35 kg of green forage was expended, instead of the 55-60 kg norm. Undesirable changes also occurred in the composition of coarse feed: there was a significant increase in the proportion of straw. If one also takes into account the fact that 34 percent of the hay, 44 percent of the herbage, and 34 percent of the silage that were prepared were third class--the nutrients in which are one-half to two-thirds of the levels found in first class feed--it is clear even without a zootechnical analysis that this type of feeding cannot be of full value.

According to existing norms, yields of 2200 kg per cow can be obtained without the use of concentrates. The experience of animal husbandry workers in the Lukhovitsy and Ramenskiy rayons of Moscow Oblast is well known; during the years of the Great Patriotic War they were able to achieve milk yields of 2700-2800 kg per cow by providing the animals with good hay, green forage, and grazing pastures, and no supplementary concentrates. The unfounded increase in

The proportion of concentrates in feed has become in recent years one of the reasons for the rise in feed costs. Over the last two five-year plans the production cost of 100 feed units spent on milk grew by 32 percent in kolkhozes and by 24 percent in sovkhozes.

An increase in the proportion of good hay, herbage, green and pasture forage certainly is a condition for increasing the efficiency of feeding cows. Are there any reserves for increasing the production of these feeds? There is a real possibility for bringing the procurement of hay up to 100-110 million tons per year, silage up to 250 million tons, and green and pasture forage up to 800 million tons simply by increasing the yield and improving the utilization of hayfields and pastures; half of this volume can be directed to the dairy herd. In this way the composition of the feed can be improved significantly and there is an opportunity to create extra feed reserves.

Feed concentrates consist primarily of food grains, not forage grains; and leguminous plants are in particularly short supply among the food crops. Food grains are predominant even in the mixed feed. According to scientifically-based norms, mixed feed should contain no more than 15-18 percent wheat, but actually it contains over 30 percent; it has about 10 percent corn, instead of 20 percent; and 2 percent leguminous plants, instead of 15-16 percent. The usual grain mixes are even less complete, and approximately 70 percent of the concentrates are given in the unprepared form.

The disproportionate composition of the rations is caused by inadequate planting of grain crops. Now there is a clearly insufficient proportion of fodder grain crops, and especially leguminous crops. Feed grain crops account for 45 percent of the total area of land planted with grain; and leguminous crops account for only 4 percent. In a number of Western European countries the proportion of leguminous crops exceeds 12 percent. Incidentally, references to foreign practices is not necessary here, since our country also has instructive experience in organizing feed grain cultivation. In the Soviet Baltic republics, where animal husbandry is highly developed, feed grain crops account for 71 to 87 percent of the total grain cultivated. In the RSFSR, however, the average proportion is 48 percent; and in the Ukraine it is 50 percent.

According to our calculations, in order to satisfy completely the country's demand for food and industrial grain, for seed material, and for reserve stores of grain, it is necessary to plant a little more than 50 million hectares with these grain crops; that is, about 40 percent of the total area of land used for grain cultivation. The remaining 60 percent, or over 76 million hectares, can be used to produce feed grain and leguminous crops. There is also a need to improve the distribution of grain crop cultivation. Specifically, there should be expanded cultivation of corn in regions with more favorable conditions for this crop: in the Northern Caucasus, the Ukraine, Moldavia; in irrigated areas of Central Asia, the Transcaucasus, the Kazakh SSR, and along the Volga. There should be expanded cultivation of barley in regions of the Urals, Siberia, and Kazakhstan, where it offers a higher yield than spring wheat. Such changes in the structure and distribution of grain production can provide an additional 10 million tons of grain on top of the yield achieved, with 7 million tons resulting from the improvement of the grain production pattern.

In order to reduce the costs of feed it is necessary to make broader use of the interchangeability of feed crops within the limits of each type of feed. This will make it possible to select efficient crops for cultivation. However, a poor job has been done of introducing into production the economic evaluation of feed substances. As a result, large areas are occupied by feed crops that are unfavorable in terms of expenditures of labor, material resources, and production output. Thus, in the Central region, the expenditures on 1 hectare of land planted with fodder crops range within the limits of 1:15, and the fodder output in feed units ranges within the limits of 1:3. In a number of economic regions this ratio is less favorable.

In industrial animal husbandry the composition of rations should be simplified as much as possible; it should be reduced to 2 or 3 components. In Soviet and especially in foreign practice, rations have been used successfully in feeding cattle which contain only herbage (silage), mixed feed, and hay. Under these conditions mixed feed becomes a very important integral part of the ration, since it contains the entire complex of balanced nutrients. A ton of mixed feed, when compared with the same amount of feed grain, provides an additional 150-300 kg of milk and at the same time reduces its production cost by 25-30 percent. Unfortunately, as has been noted, the majority of feed grain earmarked for dairy cattle is provided in the form of grain mixtures. Today only 17.4 percent of the total production of mixed feed in the country is for cattle. In order to provide the animals with fully nutritious feed and to obtain 3000-3500 kg of milk per cow per year, it is necessary to expand production of special mixed feed for dairy cattle at least by a factor of 2.5-3, and to bring the volume of this mixed feed production to 25-30 million tons.

Improved reproduction of the herd. The animals' productivity, repayment of the feed, and other expenditures depend not only on improved feeding, but also on improving the animal breeds. An especially strong effect is achieved when the herd's genetic qualities are improved at the same time improvements are made in the feeding. The effects of feeding and breeding taken together are not simply the sum of the two factors; the resulting interaction increases the total effect. This fact should be utilized in the economics of dairy animal husbandry.

The most effective breed of the 49 breeds and breeding groups of cattle raised in the country is the Holstein. This breed has the highest milk productivity and adapts well to industrial technology. Other conditions being equal, the Holsteins produce 300-500 kg more milk than other breeds. Breeding and improvement of the specialized Holsteins is one of the most important directions for intensification of this sector.

For simple reproduction of the dairy herd, kolkhozes and sovkhozes need over 6 million young animals per year as replacements. In monetary terms this represents about 6 billion rubles, or up to 20 percent of the total capital investments. Many farms, due to limited resources or a low turnover rate in their working capital for raising replacement animals, are not able to carry out normal reproduction of the herd. Traditional methods for raising immature cows do not provide animals with the necessary qualities. All this requires a

massive conversion to intensive methods of raising replacement animals. One such method is the creation of specialized heifer and calving farms or sectors within farms. Their economic importance lies in the fact that they not only free dairy farms from the job of raising the replacement animals, they also increase the animals' marketability. This has already been demonstrated in this country. In 1981 there were 2100 specialized farms for raising replacement heifers. In a year they produced and sold to kolkhozes and sovkhozes 3.9 million head of cattle with an average weight of 380 kg and a cost per head of about 900 rubles. This cost is 25 percent lower than the usual cost. The majority of the heifers sold were first class.

An important aspect of the economics of dairy animal husbandry is the planning of rational periods of time for exploitation of the cows. With the existing yields, we cannot justify the almost universal practice of rejecting and eliminating 25 percent and more of the cows in the herd. This not only increases expenditures for raising replacement animals, it also removes the possibility of improving their quality. In the final analysis this leads to an increase in milk production expenditures, since it becomes necessary to raise young cows at the dairy farms (their weight in the herd increases by 50-70 kg).

Improved reproduction of the herd assumes elimination of barrenness among the animals. Between 1965 and 1980, for every 100 cows in the country's kolkhozes and sovkhozes, 80 calves were produced; at a significant number of farms, fewer were produced. In the RSFSR in 1981, over 4 million cows did not bear offspring; in the Ukraine this figure was over 2 million. The time periods for insemination of replacement heifers were stretched out to 23 months and longer. As a result of infertility among cows and heifers, the country has had a yearly shortfall of approximately 10 million calves, 8-10 million tons of milk, and millions of tons of meat. The main reasons for infertility, in addition to feeding factors, are the low level of skills among the technical workers involved in the artificial insemination process, only 25 percent of whom have specialized education; and the poor provision of material and technical means for artificial insemination stations and centers. The Ministry of the Chemical Industry and the Ministry of the Medical Industry every year fail to fulfill the quotas for manufacture and delivery of products, instruments, equipment, and medicinal preparations for animal husbandry. Only half of the artificial insemination centers have a full set of instruments and equipment. In order to increase the yield of offspring, it is also necessary to apply more energetic measures for the introduction of the flow line-shop system for milk production and herd reproduction into dairy animal husbandry.

Strengthening the material and technical base of animal husbandry. Animal husbandry falls far behind crop farming sectors in terms of technical equipment. In crop farming embodied industrial labor accounts for 64.5 percent today, while in animal husbandry it is only 22 percent, and in dairy animal husbandry it is even less. The majority of operations on the farms are done manually. Due to inadequate investments for technical re-equipment of the sector, little machinery and equipment reaches the farms, and the variety of equipment is quite narrow. Of 1800 pieces of technical equipment produced by industry for agriculture, only 400 units are put out for mechanization of animal husbandry. There is a shortage of equipment and machinery at farms for carrying out labor- and time-intensive processes, and this leads to

considerable production losses. At the same time, the supply of equipment is incomplete. Under these conditions, one worker services an average of no more than 12-15 cows, while at fully mechanized farms a worker can service 23-25 cows.

In extreme demand are equipment for feed preparation, powerful milking machinery, and contemporary means for primary processing and cooling of the milk. Farms suffer great losses of milk as a result of its high acidity and poor quality. Cooled milk (10° C and below) accounts for only 40 percent of the total milk procurements; 76 percent is first quality milk. Losses resulting from delivery of poor quality milk total approximately 1 billion rubles. A large amount of this most valuable food product never reaches the population, and a great deal of labor, feed, and capital investments is lost with no possibility for compensation. The level of veterinary and technical service does not support production of high quality milk at farms nor does it help in the prevention of mastitis among the cows. Yearly losses due to mastitis total 1.5 billion rubles.

Milk processing is the most crucial final stage of production at dairy farms, and if it is not carried out properly there will be a sharp decline in the efficiency of the entire production. In order to preserve the quality of milk and prevent its spoilage, it is extremely important to create a high level of sanitary conditions at each dairy farm. Expenditures on providing the farms with equipment for filtration, cooling, and storage of milk are recovered within 1.5-2 years. However, the equipment currently being used on farms for primary milk processing are designated not for agriculture, but for specialized dairy industry enterprises. As a rule, they do not correspond to the conditions at the dairy farms; the productivity, size, and level of automation of the machinery are not coordinated, which makes it impossible to form flow lines and to reduce costs involved in the processing and storage of products. Of the 30 different technical means in the system of machinery for primary milk processing, only about half can be used in an agricultural setting. The creation of industrial flow lines for milk processing is one of the long-range directions for scientific and technical progress in dairy animal husbandry.

The transport of milk should be included in a unified industrial chain with milk production, cooling, and storage. The preservation of the nutritional properties of this product depends to a great extent on the means of transport used. Today a significant amount of milk reaches the commercial network in flasks, which lowers its quality and increases the expenses for equipment sterilization. Milk must be transported in specialized trucks; in order to accomplish this, it is necessary to convert to large milk-tank trucks and to build access roads to farms and complexes.

The shortage of fixed capital and the incomplete supply and poor quality of equipment make it impossible to make complete and productive utilization of additional investments of labor and means made in animal husbandry. As a result of this, the rate of growth in labor productivity in the sector falls significantly behind the capital-labor ratio. In the 10th Five-Year Plan the value of capital in relation to each worker grew by approximately 70 percent, and labor productivity grew by only 14 percent. The predominance of additional

expenditures on capital in comparison with the economy of wages reflects negatively on production costs and on the profitability of production.

Development of the dairy industry. Significant expansion and modernization of the material and technical base of the dairy industry is needed first in the cheese-making and milk drying sectors. Of course, internal reserves must be mobilized as well: the structure of production must be improved; incentives must be introduced for eliminating the seasonal delivery of milk. However, additional investments in the dairy industry are needed. The sum of capital investments made in the sector in the 10th Five-Year Plan turned out to be inadequate. According to calculations made by experts, a 1.8-fold increase in investments is required to in order to bring production of dry dairy products and cheese alone up to the worldwide average.

It is also important to move without delay toward increasing the capacities for production of whole milk substitutes for calves from 192,000 tons (in 1981) to 1.5 million tons; this will free up more than 10 million tons of milk for human consumption. The inadequate production of whole milk substitutes a result of a shortage of raw materials, especially the extremely low output of dry non-fat milk and churned cream. Thus at enterprises of the "Rosmolprom" [Russian Dairy Industry] Association, the average annual production of non-fat dry milk per 1 ton of butter is about 210 kg; and at individual plants in the association--the Kartalinskiy, Vengerovskiy, and Tamalinskiy plants--1000-1200 kg of non-fat dry milk are produced for every ton of butter. The growth in the production of whole milk substitutes based on non-fat dry milk is beneficial for the dairy industry and for agriculture. Every ton of this product directed to animal husbandry makes it possible to sell the state an additional 8 tons of whole milk for a total of 2896 rubles, with a selling value of 878 rubles for every ton of whole milk substitutes. Thus the profit from 1 ton of whole milk substitutes is 2016 rubles; there is also a substantial decrease in the production costs involved in raising calves. The utilization of 1 ton of whole milk substitutes for feeding calves is actually equal in value to the annual milk yield from 3 cows. Thus converting to whole milk substitutes will lead to a decrease in capital expenditures for the construction of livestock facilities, their amortization, and the transport of liquid products from milk processing.

Construction and reconstruction of animal husbandry facilities. Over the last 10 years (1971-1981) large capital investments--61 billion rubles--have been directed toward developing animal husbandry. The majority of these funds--88 percent--were spent on building and equipping production enterprises for poultry-farming and pig farming products, and for cattle fattening products. Limited resources were directed to the milk production sphere and they were used primarily for the construction of large complexes. Taking note of the obvious value of this direction in the development of the dairy industry, one must admit that these investments were often utilized without adequate technical and economic substantiation, and without taking into account concurrent production factors. Construction of the complexes was not always preceded by formation of a sufficient feed base, and preparation of a herd that was suited to industrial processing methods. For this reason, in 1980 up to 13 percent of the cattle spots in the complexes were not occupied by animals and those that were occupied were used inefficiently.

Table 7 Milk production indicators for animal husbandry complexes, 1980

<u>Indicator</u>	<u>State</u> 1093	<u>Kolkhoz</u> 937	<u>Inter-farm</u> 15	<u>Total</u> 2045
Number of complexes	1093	937	15	2045
Size of cow and heifer population, thousands	790	629	7	1426
Complexes with full livestock population, percent	94	96	69	95
Milk production, thous. tons	1701	1456	12	3169
Average yield per cow, kg	2584	2574	2331	2578
Calf yield per 100 cows	79	81	57	80
Feed expenditure per quintal milk, in feed units, including concentrated feed	144	146	177	145
Complexes with full mechanization, percent	95	90	84	93
Direct labor input per quintal milk, man-hours	5.2	6.6	9.0	5.8
Average load per worker, cows	18	17	11	17
Production cost per quintal milk, rubles	31.4	28.0	36.2	29.9
Level of profitability	-6.0	-1.6	-26.1	-4.3
Profit (+), loss (-), millions of rubles	-28.6	-5.2	-1.0	-34.7

Between 1965 and 1980 the estimated cost of construction for one cattle spot at dairy farms increased more than 3-fold, and the increased construction cost was not accompanied by a corresponding increase in the effectiveness of cattle breeding. In 1980 the average cost of one cattle spot at dairy complexes was double that at ordinary sovkhoz and kolkhoz farms and the capital-output ratio per quintal of milk was higher by a factor of 2.2. The capital-labor ratio at the complexes was also double that found at the farms; and the profitability was, on the contrary, lower (see table 7). Under these conditions the recovery of capital investments in dairy complexes takes many years.

When directing capital investments to animal husbandry, it should be remembered that kolkhoz and sovkhoz farms are still the primary suppliers of milk, providing over 95 percent of the product. Therefore, it would be wise to direct capital investments first toward the technical reconstruction and modernization of existing farms. The Ministry of Machine Building for Animal Husbandry and Fodder Production is responsible for organizing the manufacture of the necessary assortment of machinery and equipment for the reconstruction and modernization of farms with every type of herd.

An analysis of the material and technical base of the sector leads to the conclusion that it is necessary to strengthen immediately the most important subdivision of the agro-industrial complex--the sectors that manufacture production means and equipment for dairy farms, fodder production, the dairy industry, and construction organizations. This requires serious additional investments, the size of which should be calculated by specialists. A great deal of work is needed in strengthening the organizational aspects of this sphere, especially in optimizing the structure of production for putting out

only complete sets of machinery. It is also necessary to conclude work on the introduction of sound wholesale and retail prices for the equipment, to regulate repair operations, and the storage and distribution system for spare parts, and so on.

Providing skilled personnel. With the continuous strengthening and improvement of the material and technical base of animal husbandry, it is extremely important to provide the sector with skilled personnel capable of making highly efficient use of the animals, complex machinery, and equipment. Training and improving the skills of the personnel is one of the primary means of increasing the effectiveness of animal husbandry. Of all workers employed in agricultural production, 17 percent work on cattle farms; their work represents 18 percent of the labor costs. In 1981, 3.6 million people were employed in the maintenance of beef and dairy cattle; this includes 1.3 million milkers and milking machine operators, and about 1 million cattle-yard workers. In addition to this there are approximately 400,000 veterinary workers on the farms. There are an average of 4 zootechnical workers and 3 veterinarians and veterinary technicians for every farm. Still, dairy animal husbandry is experiencing a manpower shortage. There is a shortage of milkers, cattle-yard workers, and calf tenders at many kolkhozes and sovkhozes. This shortage and the low skill level of milkers lead to a shortfall in milk production of at least 10 percent. Due to the low skill level, only about half of the animal husbandry workers fulfill their output norms; while the output and animal productivity among highly skilled workers, as a rule, exceeds the norms by 10-15 percent. Only 10-15 percent of the total number of animal husbandry workers have achieved the rank of master, first or second class, even though the skills required for animal husbandry workers are in any case lower than those for tractor and machinery operators. The training for animal husbandry workers in rural technical and vocational schools, however, is poorly organized. Only 6.5 percent of all the students in these schools are being trained to work on kolkhoz and sovkhoz farms. Between 1976 and 1980, the rural technical and vocational schools trained only 240,000 people for work at animal husbandry farms and complexes; this is just one animal husbandry worker per farm per year. There is an especially acute shortage of milkers and cattle-yard workers in the RSFSR Non-Chernozem region. The successful development of this sector depends to a great extent on keeping skilled workers on the farms.

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MEASURES TO IMPROVE URAL REGION DAIRY CATTLE BREEDING OPERATIONS

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[Article by G. Kipkayev, chief of Laboratory for the Improvement of the Chernopestraya Breed of Cattle, Urals Agricultural Scientific Research Institute: "Unused Potential. Consistently Improve Breeding Work with the Chernopestraya Breed of Cattle"]

[Text] The rise in the production of animal husbandry products is due not only to an increase in the cattle population but also to a sharp increase in cattle productivity and the further improvement of animal breeds.

The breed problem is of special significance. It is sufficient to state that the annual quantity of milk from cows of the three major cattle breeds bred in our nation (Chernopestraya, Simmental and Red Steppe) comprises more than 55 million tons, or 60 percent of total milk production.

It is clear that even a small qualitative improvement in these breeds with respect to milk yield and fat and protein content will make a significant contribution and have a large economic effect.

But the dynamics of the growth and development of our cattle have their peculiarities. At the present time, 26 breeds and breed groups are distinguished, including 20 of the dairy and dairy-beef and six of the beef type, significantly complicating breeding work.

The most rapid increases in number during the past 15 years were among the Chernopestraya, Red Steppe, Kholmogor and Dutch breeds; the increase was slower among the Simmental, Tagil, Kurgan, Bestuzhev, Red Estonian, Brown Swiss and Shorthorn breeds and the Suksun group.

During these years the Sychevka, Brown Latvian, Red Danish, Yaroslavl and Jersey breeds were completely eliminated.

The more rapid increase in the herds of the Chernopestraya, Kholmogor, Red Steppe and Dutch breeds of the dairy designation is a consequence of the high level of their milk productivity.

The analysis of cow-classification data in the Urals during 1970-1980 showed that the Chernopestraya occupied one of the foremost positions with respect to milk yield by comparison with the Tagil, Simmental and Suksun. Therefore, the trend for an increase in the numbers of specialized dairy breeds will be maintained in the near future in most of our oblasts.

Chernopestraya cattle today occupy the foremost position among dairy and dairy-beef cattle breeds with respect to their numbers and percentage in the Urals and are bred in Sverdlovsk, Perm, Kurgan, Cheryabinsk, Tyumen and Orenburg oblasts and in the Udmurt and Bashkir ASSRs. According to breed-inventory data, they numbered 1.4 million head on 1 January 1980. The greatest percentage of these cattle is in Perm (48.8 percent), Tyumen (47.4 percent), Sverdlov (46.8 percent) and Chelyabinsk (45.7 percent) oblasts. In the Urals as a whole, they comprise 28.2 percent of the total herd.

Presently active in the Urals are two breeding stud farms, eight breeding sovkhozes and 135 breeding farms. This is the main base for the development of Chernopestraya cattle. But it is still extremely inadequate, especially in Perm, Kurgan and Tyumen oblasts.

Throughout the Urals as a whole, 0.5 percent of the total number of cows in the breed were in breeding stud farms and 2.6 percent in breeding sovkhozes, although there should be 5-8 percent in order to provide the breeding enterprises with high-value male replacement calves.

During the same year the average milk yield of Chernopestraya cows with respect to the last, terminal lactation comprised 4,203 kg in breeding stud farms, or 1,682 kg greater than in the Urals as a whole; the figures in breeding sovkhozes were 3,727 and 1,206, respectively.

Therefore, a two-fold increase in the number of breeding farms and a rise in the productivity of the animals in breeding stud farms and sovkhozes is one of the basic tasks of supervisors and specialists working to improve Chernopestraya cattle.

According to the classification data in 1981, the average milk yield of 455,600 Urals Chernopestraya cows was 2,463 kg milk with a fat content of 3.68 percent (see table).

At the present time about 26,000 cows have a milk yield of from 4,000 to 7,000 kg and higher, including 5,843 with from 5,001 to 7,000 kg and 268 with from 7,001 to 10,000 kg and more. Unfortunately, it must be stated that during 1981 the numbers of highly-productive cows declined by nearly 4,000, including a decline by 1,140 in the numbers of cows with a milk yield of from 5,000 to 7,000 kg.

Therefore, the organization of a rise in the individual milk production of cows to 8-9,000 kg milk and higher per lactation and the creation of highly-productive maternal groups for the sale of male replacement calves to Urals state breeding enterprises should in the immediate future have priority at all leading breeding units.

Table 1. Productivity of Cows of the Chernopestraya Breed in the Urals
(according to classification data)

Oblast	Number of cows, thousands	Milk yield, kg	Fat content, %
Sverdlovsk	<u>83.9</u> 91.2	<u>2961</u> 2801	<u>3.73</u> 3.72
Perm	<u>91.4</u> 93.4	<u>2442</u> 2293	<u>3.7</u> 3.67
Kurgan	<u>60.3</u> 69.1	<u>2245</u> 2274	<u>3.7</u> 3.69
Chelyabinsk	<u>131.3</u> 135.1	<u>2504</u> 2476	<u>3.67</u> 3.66
Udmurt ASSR	<u>1.3</u> 1.5	<u>3132</u> 2923	<u>3.69</u> 3.73
Orenberg	<u>0.5</u> 0.6	<u>2234</u> 2357	<u>3.5</u> 3.58
Tyumen	<u>64.7</u> 64.6	<u>2358</u> 2396	<u>3.65</u> 3.64
Total	<u>433.4</u> 455.6	<u>2521</u> 2463	<u>3.69</u> 3.68

Note: Data for 1980 in numerator and data for 1981 in denominator.

The high-value, productive dairy herd possessing milk with a high fat content should be widely used for the improvement of the Urals Chernopestraya cattle. With this purpose, each breeding unit, each breeding farm must organize the individual within-line selection of the best maternal stock for bull strain-builders--the continuers of the major breeding lines and parent groups.

The highest milk productivity was achieved by the leading breeding units, which have created a solid fodder base for the development of dairy husbandry. For example, in 1981 at the Perm Stud Farm No 9 the average milk yield from 600 cows of the Chernopestraya and Dutch breeds comprised 5,805 kg milk with 3.85 percent fat. One year earlier the livestockmen of this unit obtained a record milk yield of 6,018 kg milk from each cow. In the herd of the Istok Experimental Demonstration Farm of the Urals Agricultural Research Institute in Sverdlovsk Oblast, 5,486 kg milk were obtained with 3.76 percent fat from each of 520 cows evaluated in 1981; 4,090 kg milk with a fat content of 3.97 percent were obtained from each of 1,670 cows in the Kolkhoz--Breeding Stud Farm imeni Sverdlov in Sysertschiy Rayon, Sverdlovsk Oblast; 4,285 kg milk with a fat content of 3.77 percent were obtained from each of 1,652 cows at Rossiya Sovkhoz, Chelyabinsk Oblast; 3,903 kg milk with a fat content of 3.60 percent were obtained from each of 2,270 cows at Verkhnemullinskiy Sovkhoz, Perm Oblast.

There are in the Urals record-setting cows of the Chernopestraya breed, producing milk, as a rule, in breeding units. In 1981 in Gornoshchitskiy Sovkhoz, Sverdlovsk Oblast, the cow Strekoza 96 produced during the fourth lactation up to 11,400 kg milk with 4.17 percent fat. At Stud Farm No 9, 81 tons milk were obtained from Anzhelika 696 during the ninth lactation, while her record milk yield during the eighth lactation was 11,283 kg milk with a 3.98 percent fat content. The cow Zvezda 1802 of Rossiya Sovkhoz, Chelyabinsk Oblast, gave 11,054 kg milk with 3.97 percent fat during the fourth lactation.

The date on the level of productivity of numerous cattle and on individual record cows indicate the high potentials of Urals Chernopestraya cattle. Therefore, by improving feeding and conducting directed selection for milk yield, most production units in our area can obtain 3,800 to 4,500 kg milk, while breeding units can obtain up to 5,000 to 6,000 kg per cow annually.

There is still another problem--the rearing of calves. Calf-rearing is organized very unsatisfactorily in all Ural oblasts. The average live weight of heifers comprised 195 kg at 10 months, 225 kg at 12 months and 297 kg at 18 months. This is below the first-class standard by 30, 25 and 33 kg, respectively. The percentage of replacement heifers corresponding to first-class requirements and higher is only 42-45.3 percent.

The live weight of monoparous cows in the area is 408 kg, upon the second calving, 437 kg and that of sexually mature cows, 469 kg, which is also below the standard for Chernopestraya cows. From 28 to 71 percent of the cows in individual oblasts correspond to the first-class standard and higher. Their live weight is especially low in the farms of Kurgan, Perm and Tyumen oblasts. Here, the percentage of such animals is from 28 to 43 percent.

The unsatisfactory rearing of replacement heifers and the low live weight of cows is one of the main reasons for the low milk productivity of monoparous cows as well as the untimely insemination of heifers, which considerably prolongs and increases the expense of rearing. Calf quality can be improved by creating specialized units and farms for rearing noncalving heifers and replacement heifers.

Goal-directed breeding and the improvement of Urals Chernopestraya cattle in recent years made it possible to improve their quality considerably. The percentage of purebred and highly-bred animals (fourth-generation hybrids) increased in 1981 by 17.1 percent by comparison with 1976. The percentage is highest in farms in Sverdlovsk and Chelyabinsk oblasts and the Udmurt ASSR (80-82 percent). The numbers of purebred animals are low in Perm, Kurgan and Tyumen oblasts (19 and 33 percent).

The numbers of animals of the elite-record, elite and first classes increased during the last 6 years (1976-1981) from 35.2 to 40.3 percent. The very low rates of increase were due to the low level of productivity of the dairy cattle and the unstable food base in many farms.

Therefore, one of the tasks in the future for improving Chernopestraya cattle is to increase the number of purebred and highly-bred animals. This will per-

not only a more intensive selection during the breeding of purebred animals but also a more effective use of heterosis in crosses with related breeds--the Dutch and Holstein-Friesian.

The solution of the problem in large degree will depend upon the qualitative composition of sires. At the present time in our area there are 4,580 bulls of the Chernopestraya, Dutch and Holstein-Friesian breeds, of which 4,466 (97.5 percent) are purebred and 95.4 percent belong to the elite-record and elite classes according to a comprehensive evaluation. However, hybrid and low-grade bulls are still comparatively numerous (from 2.5 to 4.6 percent), especially at farms in Perm and Tyumen oblasts. They should be immediately culled, and all dairy cattle should be inseminated by artificial insemination with deep-frozen semen from the progeny-tested sires of enterprises.

The artificial insemination of cows and heifers with deep-frozen semen has at the present time become the basic method in dairy-herd reproduction in the Urals. Large complexes have been constructed for breeding and artificial insemination in most oblasts and autonomous republics. Cryogenic technology, liquid nitrogen, autotransport and other equipment are available in sufficient quantity.

The breeding enterprises are supplied with high-value bulls of the basic planning breeds and have a large reserve of deep-frozen semen (more than 20.6 million doses).

In 1981 in the Urals, 83 percent of the maternal herd relative to its total mated contingent was artificially inseminated with deep-frozen semen; the load per single bull increased to 2,008 cows and heifers, while the cow fertility was 90-95 percent. Nearly all cows and heifers were artificially inseminated in Chelyabinsk and Sverdlovsk oblasts, but in Perm and Orenburg oblasts and in Udmurt ASSR, only 64-73 percent clearly insufficient for a planned improvement of breeding and production qualities and the elimination of cow sterility.

Our network of support farms, where bulls are evaluated for progeny quality, has increased in recent years. They numbered 118 in 1980, and from 185 to 286 bulls, half of which were sires of the Chernopestraya breed, were evaluated annually. The number of tested bulls more than doubled by comparison with 1975. Under conditions of the broad introduction of artificial insemination, the specialists of the leading breeding farms, state breeding associations and state breeding enterprises must devote constant attention to testing sires for progeny quality, to the creation of reserves of deep-frozen semen, to the selection of strain-builders, the fathers of future male replacement calves for state breeding farms, and to the testing of the reliability of their origin with respect to groups of cows.

In Urals farms in 1980 there were 73,300 head of pedigree calves or 4.2 for each 100 cows. The most calves for breeding purposes were raised by farms in Sverdlovsk (18,800) and Orenburg (29,900) oblasts.

Three new bull stud lines in the Urals variety of the Chernopestraya breed--Poseydon 239, Eval'da 19 and Atleta 4--were recently evaluated and confirmed. Furthermore, five new highly-productive parent groups of bulls were recently established: Salavata 1183, Boya 1532, Oreshka 1, Aktera 261 and Vulkana 319/37.

Further breeding work with these groups is conducted in the major Urals breeding herds toward establishing and transforming them into stud lines by means of selecting and choosing animals according to their build and milk production, the application of planned inbreeding of various degrees of relationship and the systematic verification and evaluation of sires by progeny quality with the subsequent wide use of strain-building bulls.

The major method for breeding Chernopestraya cattle is the breeding of purebred animals and absorptive crossing of local cattle with purebred bulls of the Chernopestraya breed.

The methods of immunogenetics acquire ever increasing significance in the practice of selecting Chernopestraya cattle.

In the laboratories of a number of scientific research institutions (the All-Union Animal Husbandry Scientific Research Institute, VNIIRGZh [not further identified], The Urals Agricultural Scientific Research Institute and others) from 42 to 58 reagents were obtained and verified in international tests with respect to 11 genetic systems for determining cattle blood groups and determining genetic similarity and differences between breeds, lines and families.

In a number of oblasts (Sverdlovsk, Perm and Chelyabinsk) a state certification of sires, cows and calves with consideration of immunological testing has been begun at state enterprises and at the leading breeding units. The monitoring of the reliability of animal origin by immunological methods should be expanded in the future, primarily at breeding stud farms and svkhozes.

The main condition for the effective performance of breeding work in any herd is a well-designed production-zootechnical record-keeping. At the present time, card indexing is conducted for 2.3 million cows and heifers in Urals farms (800,000 more than in 1976). This made it possible to nearly double the volume of card processing on the 2-MOL form for computers. At the same time, the performance of zootechnical record-keeping is made difficult by the fact that the number of monitoring assistants and zootechnicians for record-keeping has been greatly reduced in certain farms in Perm, Orenburg and Chelyabinsk oblasts.

The realization of the complex of measures outlined for improving the level of breeding work in dairy husbandry with a simultaneous strengthening of the fodder base is what is necessary for successfully solving the problem of further increasing milk and beef production. Agronomists and zootechnicians must work together closely in order to bring these reserves into use.

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LIVESTOCK

UZBEK DECREE ADOPTED TO ACCELERATE LAGGING MECHANIZATION IN LIVESTOCK SECTOR

Tashkent PRAVDA VOSTOKA in Russian 7 May 83 pp 1-2

[Article in the column "In the Uzbekistan Communist Party Central Committee and the Uzbek SSR Council of Ministers": "For Technical Progress in Animal Husbandry"]

[Text] The Uzbekistan Communist Party Central Committee and the Uzbek SSR Council of Ministers have adopted a resolution "On Measures For Further Increasing the Level of Mechanization of Animal Husbandry and the Maintenance of Livestock Complexes, Poultry Plants and the Republic's Kolkhoz and Sovkhoz Farms."

It is noted in the resolution adopted that livestockmen and party, soviet and agricultural organs of the republic, in fulfilling the decisions of the 26th Party Congress and the May and November (1982) Plenums of the CPSU Central Committee, have achieved a significant increase in production and sales to the state. In 1982, the production of meat increased by 31 percent compared with its average annual production during the 10th 5-Year Plan. Milk production increased by 28 percent and egg production by 33 percent. Considerable work was done to change agriculture over to an industrial basis. Many highly-mechanized livestock complexes, poultry plants and farms were constructed. Buildings for 770,000 head were comprehensively mechanized and about 1,000 feed-preparing plants were opened during 1976-1982 on cattle farms. As a result, labor productivity in animal husbandry increased by 20 percent during this period.

Considerable work is being done for maintenance and equipment repair on livestock farms.

At the same time, the Uzbekistan Communist Party Central Committee and the Uzbek SSR Council of Ministers believe that work tempos in the mechanization of labor-intensive processes in animal husbandry, and especially in the provision for the daily functional capacity of equipment used on farms, are not yet consistent with the goals for the development of the branch adopted by the 9th Plenum of the Uzbekistan Communist Party Central Committee.

The level of mechanization of labor-intensive work still remains low at many farms, while the annual increase in the level of mechanization lags behind the tempos of development of animal husbandry in the republic.

This is explained by the fact that many farms and agricultural organs give insufficient attention to questions of organizing the use of equipment on farms, and party and soviet organizations are not sufficiently demanding of them in regards to the bad management that is tolerated. Adequate measures are not taken for training cadres to service livestock equipment and strengthening cadres on farms.

Serious deficiencies are tolerated in the work of maintaining and repairing machinery and equipment by the organizations of the Uzbek SSR State Committee for the Supply of Production Equipment for Agriculture, which primarily perform repair work and do not provide for the uninterrupted operation of the available machinery. At the present time, stations for the maintenance of livestock farms and complexes have been organized in only 105 to 159 rayon agrotechnical associations. This work is particularly poorly established in the virgin rayons.

Advanced methods for the highly-efficient use of equipment are slowly disseminated; the experience of advanced livestockmen, new techniques and progressive technology are poorly propagandized and introduced. The work on converting animal husbandry to an industrial basis is poorly clarified in the pages of the republic and oblast newspapers and in broadcasts on television and radio.

The Uzbekistan Communist Party Central Committee and the Uzbek SSR Soviet of Ministers have obliged the Ministry of Agriculture, the Ministry of the Fruit and Vegetable Industry, the Uzbek SSR State Committee for the Supply of Production Equipment for Agriculture, the Main Central Asian Agricultural Construction Administration, the Central Asian Department of the Academy of Agricultural Sciences imeni V. I. Lenin, the oblast and rayon party committees, the Council of Ministers of the Karakalpak ASSR and the oblast and rayon executive committees to eliminate decisively the existing serious deficiencies in the organization of work for the mechanization of animal husbandry, to adopt the necessary measures for the highly-efficient use of equipment on farms, complexes and poultry plants and for increasing the level of mechanization of work-intensive jobs in animal and poultry husbandry. To bring the level of mechanization by the end of 1985 as a whole for the republic:

--to 100 percent for cow watering and milking, to 65 percent for feed distribution and to 80 percent for manure removal on cattle farms;

--to 100 percent for watering, to 85 percent for feed distribution and to 90 percent for manure collection on swine farms;

--to 100 percent for watering, food distribution and manure collection on poultry plants and poultry farms.

In accordance with this, the Uzbek SSR State Committee for the Supply of Production Equipment for Agriculture has been instructed to provide for the fulfillment of the necessary volumes of work for the mechanization of labor-intensive processes on working farms and to provide for the delivery in 1983-1985 to the republic's kolkhozes and sovkhozes of the requisite quantity of machinery and equipment:

--The Ministry of Agriculture, the Uzbek SSR Ministry of the Fruit and Vegetable Industry, the Main Central Asian Agricultural Construction Administration and the Central Asian Department of the Academy of Agricultural Sciences imeni V. I. Lenin are to stipulate in the plans for 1984-1985 the allotment of capital investments necessary for the fulfillment of work to raise the level of animal-husbandry mechanization to the level established by the present resolution, while the Uzbek SSR Gosplan and Gassnab are to provide for the allotment to the Uzbek SSR Gosplan and Gassnab are to provide for the allotment to the Uzbek SSR State Committee for the Supply of Production Equipment for Agriculture the necessary material resources;

--The Ministry of Agriculture, the Uzbek SSR Ministry of the Fruit and Vegetable Industry, the Main Central Asian Agricultural Construction Administration and the Uzbek SSR State Committee for the Supply of Production Equipment for Agriculture are to provide for the construction and supply of equipment and the introduction in 1983-1985 of 876 feed-preparing plants in the republic's kolkhozes and sovkhozes;

--The Ministry of Agriculture, the State Committee for the Supply of Production Equipment for Agriculture and the Uzbek SSR Central Statistical Administration jointly with other interested ministries and departments in the republic are to complete before 1 July 1983 the technical inventory of livestock farms, complexes and poultry plants, to analyze their technical state and on this basis to make proposals to the republic's Council of Ministers for providing for the start up of nonfunctional and the replacement of morally antiquated equipment with indication of the executors and time of completion of the work;

The Uzbek SSR State Committee for the Supply of Production Equipment for Agriculture is to:

--carry out in 1983-1985 the reconstruction of 63 existing stations and create an additional 54 new stations for the maintenance of kolkhoz and sovkhoz livestock farms, primarily in virgin rayons; while the Uzbek SSR Gosplan is to stipulate in the drafts of plans for 1984-1984 the allotment to the Uzbek SSR State Committee for the Supply of Production Equipment for Agriculture of capital investments and a quota of contract work for these purposes;

--create points at jurisdictional enterprises located near industrial complexes and poultry plants for their servicing;

--cover, jointly with the Ministry of Agriculture, with repair and maintenance the water-lifting equipment, water-line system and special automobile transport in herding animal husbandry;

--radically improve work on the repair and arrangement of equipment for livestock farms, complexes and poultry plants, and raise the quality of repair and start-up work;

--provide timely outfitting of constructed and reconstructed livestock facilities in the republic's kolkhozes and sovkhozes with machinery, equipment, cable product, appliances, electrical equipment and other material-technical resources;

--achieve more complete provision of agricultural subsidiary farms of the Uzbek SSR ministries and departments with agricultural technology and livestock equipment according to the established nomenclature, and to perform in them work associated with the mechanization of productive processes, maintenance and equipment repair along roads with enterprises and organizations having subsidiary farms;

--in the interests of introducing new industrial repair methods and increasing labor productivity and the quality of work, to provide for the allotment of capital investments in 1983-1985 for the development of the production base in repair subdivisions for the out-put of semi-finished products and nonstandardized equipment in order to bring by the end of the 5-year plan the volume of production of these semi-finished products to 35 percent of the volume of work for the repair of technical equipment;

--to assist the managers in creating maintenance points on livestock farms, complexes and poultry plants, to stock them with technological equipment, appliances and instrumentation; to provide these points with rapid-wearing spare parts, repair materials and appropriate technical and standardized documentation and, also, to provide for the training of workers in highly-effective techniques and methods of utilization and repair of the means of mechanization on livestock farms, complexes and poultry plants;

--to provide for the quality repair of electrical motors, pump equipment and water-supply equipment, boiler, ventilation and refrigeration equipment and equipment for feed-preparing plants and manure and droppings collection on commercial complexes, poultry plants and farms;

The Uzbek SSR Gosplan and Gossnab are to provide for the allocation to the Uzbek SSR State Committee for the Supply of Production Equipment for Agriculture of a separate building-site for the repair--operational needs for metal-rolling, pipes, electrodes, industrial equipment, spinning and enamel conduits, monitoring-measuring apparatus and automatic machines, fluorescent lamps, starters, spare parts and fixtures and other material-technical resources necessary for livestock and poultry farms, complexes and poultry plants.

The Karakalpak ASSR Council of Ministers and the oblast executive committees are to solve the question of the allocation of buildings for organizing maintenance points for industrial livestock complexes, poultry plants and farms.

The Uzbek SSR State Committee for the Supply of Production Equipment for Agriculture, the Ministry of Agriculture and the State Committee for Vocational and Technical Education are to provide for the annual training and teaching of master repairmen for the technical servicing of equipment, machine-milking experts, operators of feed-preparing plants and electricians in the necessary quantity.

The Ministry of Agriculture, the Ministry of the Fruit and Vegetable Industry, the Ministry of Agricultural Construction, the Ministry of Power and Electrification, the Uzbek SSR State Committee for the Supply of Production Equipment for Agriculture, the Main Central Asian Agricultural Construction Administration,

the Uzkokkhozstroy and the Central Asian Department of the Academy of Agricultural Sciences imeni V. I. Lenin are to provide in the plans for 1984-1985 for the construction at existing livestock farms of decontamination centers, consumer-service buildings, loading-unloading sites, automatic weigh stations, milk assemblies, feed-preparing plants and sheds for the hardward of vitamin-flour and granule preparation, hay and silage pits and silos and, also, for the electrification and improvement of farm properties.

The Uzbek SSR Ministry of Power and Electrification jointly with the Ministry of Agriculture and the SAO Sel'energoprojekt [probably Central Asian Department of the Rural Power Project] in the current 5-year plan are to provide for the requirements of the first category--livestock complexes and poultry plants--with a reserve supply of electrical power at the expense of quotas stipulated for the electrification of the republic's agriculture.

The State Committee for the Supply of Production Equipment for Agriculture, the Ministry of Agriculture, the Uzbek SSR Ministry of the Fruit and Vegetable Industry and the Main Central Asian Agricultural Construction Administration are to take additional measures to improve the deliveries to the republic of corn-harvesting combines and other technology for animal husbandry and feed production.

The State Committee for the Supply of Production Equipment for Agriculture, the Ministry of Agriculture, the Uzbek SSR Ministry of the Fruit and Vegetable Industry, the Main Central Asian Agricultural Construction Administration, the Central Asian Department of the Academy of Agricultural Sciences imeni V. I. Lenin, the local party, soviet and agricultural organs and the trade union and Komsomol organizations are to provide for the wide introduction into production of the achievements of science and technology, advanced experience on the comprehensive mechanization of animal husbandry and poultry husbandry and the organization of repair and maintenance for complexes and poultry plants.

The oblast committees, city committees and rayon committees of the party, the primary party organizations of the kolkhozes, sovkhozes, livestock complexes and poultry plants are to establish daily control of the course of work on the mechanization of animal husbandry and to render greater assistance in the implementation of measures stipulated by the present resolution. To raise the responsibility of the supervisors of farms, livestock complexes and poultry plants for the development of the mechanization of labor-intensive work on farms, the highly-productive utilization and maintenance of machinery and equipment in animal husbandry and feed production.

--To raise the level of political and organizational work among livestockmen, to show constant concern for the intensification of animal husbandry, its transfer to an industrial basis, the enhancement of productivity and the sharp reduction of manual labor, the lowering of the cost of production.

--To create in each livestock collective an atmosphere of business-like order, creativity and enthusiasm, the interested search for reserves.

--To enhance in this matter the role of the trade union, Komsomol and other social organizations. It is important that each member of the collective be thoroughly aware of his place, his responsibility for the fulfillment of the Food Program.

--To strengthen the livestock branches with permanent cadres of machine operators, to raise their qualification, to send more communists and Komsomol members to work on farms and complexes.

--To activate work for rendering sponsorship assistance to the village on the part of industrial enterprises and organizations. They must have a concrete plan for rendering aid in the development of animal husbandry for each year and strictly fulfill it.

The agents of mass information are charged with utilizing skilfully and with great effectiveness their potential for influencing the improvement of matters in the development of technical progress in animal husbandry. The experience and innovations of the best workers of the branch, the introduction of the brigade contract, the methods for raising economic efficiency in animal husbandry and the course of socialist competition must become a constant theme of newspapers and journals and in broadcasts on the television and radio.

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EFFECTIVENESS OF SPECIALIZATION, INTERFARM COOPERATION IN LIVESTOCK PRODUCTION

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 6, Jun 83 pp 48-53

/Article by Yuriy Ivanovich Kambarov, candidate of economic sciences, senior scientific associate of the branch of the VNIETUSKh for the Central Chernozem Zone: "The Economic Effectiveness of Specialization and Interfarm Cooperation in the Production of Animal Husbandry Products" /

/Text/ In terms of agriculture the Central Chernozem Zone of the RSFSR is a region of highly intensive farming and animal husbandry. Here, based on production conditions, the degree of development of specialization and cooperation, and also other organizational and economic factors, the following main forms of interfarm cooperation have arisen for producing animal husbandry products: interfarm enterprises, kolkhozes that perform individual production functions on principles of interfarm cooperation; and associations for producing poultry products or feeds.

Among the interfarm enterprises for producing beef there are those which engage only in fattening or completion of the raising and fattening of young large horned cattle, and those which carry out these operations with their own feeds or feeds delivered to them by reproduction or feed production farms. Research and practice have shown that the most promising under the conditions of the zone are the 1st and 3rd variants of specialized feed production.

Similar peculiarities are noted in the organization of the production of pork on an interfarm basis. Interfarm hog enterprises are distinguished not only in terms of the principles for providing feeds, but also in terms of the form of the organization of reproduction and replenishment of the basic animals and those that are being fattened. Among them are enterprises which partially or fully provide for the reproduction of the herd, and also those which replenish the herd of young animals being fattened completely through deliveries from participating farms.

In the hog raising branch specialization on the basis of interfarm cooperation has been greatly developed. In 1981 there were 78 interfarm hog raising enterprises in operation in the zone (they produced 31.8 percent of all the pork produced in the public sector), 21 kolkhozes that performed functions for producing pork on an interfarm basis (6.1 percent of all the pork) and 93 sovkhozes of the Svinoprom system (6.1 percent of all the pork). In addition

in these narrowly specialized enterprises, many other farms participate in pork production, the majority of which deliver piglets or feed to the interfarm fattening complexes. In Voronezh Oblast, for example, 75.7 percent of the kolkhozes and sovkhozes are participants in cooperation for pork production, and in Tambov Oblast--98 percent of the kolkhozes and sovkhozes.

The existence of various organizational forms of pork production and types of specialized farms in the zone shows the complexity and imperfection of the process of specialization and concentration on the basis of interfarm cooperation in this branch. All types of specialized enterprises are in the stage of improvement and all of them participate to a certain degree in interfarm cooperation. These cooperative ties have the nature of contractual relations regarding the delivery of piglets and feeds to interfarm complexes or temporary commercial ties regarding the acquisition of breeding animals and young animals for replenishing the herd. But so far there are no clearly developed technological and economic cooperative ties here, even with such a great diversity of types of enterprises that are under the jurisdiction of various departments. Therefore it is necessary to develop a system of measures that provide for permanent technological and organizational ties among various types of farms under the conditions of interfarm cooperation.

Specialization and interfarm cooperation are not a goal in themselves, but an effective means of increasing the economic effectiveness of agricultural production. But because of a number of organizational-economic reasons this important factor in increasing the efficiency of production does not yet exert a stimulating influence in all areas. This can be shown from the example of various types of hog raising enterprises in the oblasts of the Central Chernozem Zone (TsChZ), where processes of cooperation have been especially widely developed (see Table 1). From the figures in this table it is clear that under the 10th Five-Year Plan pork production was carried out efficiently in Belgorod and Voronezh Oblasts, and that hog raising was unprofitable in Kursk, Lipetsk and Tambov oblasts. And in Tambov Oblast hog raising is unprofitable on the kolkhozes and sovkhozes, but it is profitable at the interfarm enterprises.

But on the whole the level of profitability of pork production decreased appreciably during the years of the 10th Five-Year Plan in all of the oblasts and formations that were analyzed, and the rates of development of the hog raising branch slowed down. The reason for this lies primarily in the unfavorable weather conditions in the zone during these years which were reflected in the level of feed production. A great deal of influence was also exerted by the violation of the proportionality and comprehensiveness when conducting specialization in hog raising on the basis of cooperation. The majority of interfarm enterprises of the industrial type have been organized as fattening enterprises, and reproduction and feed production were to be developed on participating farms with the ordinary technology. This direction in the development of the hog raising branch in the future did not have sufficiently profound scientific substantiation.

Our research shows that reproduction and raising of piglets up to 4 months of age, that is, before they are delivered for intensive fattening, is technologically the most complicated and labor-intensive stage of production. Expenditures on maintaining the herd of sows and raising piglets up to this age amount to no

Table 1. Basic Indicators of Pork Production at Various Types of Enterprises of Oblasts of the Central Chernozem Zone, Average for 1976-1980

1) Oblasts и типы предприятий	В расчете на 1 ц прироста живой массы свиней		5) Средне- суточный прирост живой массы пиговат- ей в возрасте свыше 2 меся- цев, г	6) Средняя живая масса одного реализо- ванного животно- го, кг	7) Себесто- имость одного животно- го, руб.	8) Прибыль одного животно- го, руб.
	(2) затратами труда, чел.-ч	(4) приростом живой массы*				
9) Белгородская область						
10) Колхозы и совхозы	22.9	7.7	278	102.4	146.7	11.2
11) В том числе:						
12) Колхозы	26.8	8.1	265	100.6	151.4	8.7
13) Колхозы, выполняющие функции по производству свинины на принципах межхозяйственной кооперации	21.5	7.6	260	99.9	141.1	9.9
14) Совхозы системы «Свинопром»	7.7	6.3	332	110.0	124.9	14.8
15) Воронежская область						
16) Колхозы, совхозы и межхозяйственные предприятия	24.8	8.6	246	88	147.1	6.2
17) В том числе:						
18) Колхозы	54.3	11.2	163	83	203.5	-10.7**
19) Межхозяйственные предприятия	6.4	7.1	318	95	119.9	-
20) Совхозы системы «Свинопром»	18.6	8.0	271	77	134.3	-13.2
21) Курская область						
22) Колхозы, совхозы и межхозяйственные предприятия	57.1	12.4	161	89	243.3	-25.5**
23) В том числе:						
24) Колхозы	98.4	16.1	106	67	327.0	-44.2**
25) Межхозяйственные предприятия	15.4	9.2	249	99	175.1	-8.9**
26) Совхозы системы «Свинопром»	38.2	13.4	157	88	232.7	-25.3**
27) Липецкая область						
28) Колхозы, совхозы и межхозяйственные предприятия	21.6	9.5	231	94	203.0	-7.5**
29) В том числе:						
30) Колхозы	53.9	12.3	177	88	264.4	-22.7
31) Межхозяйственные предприятия	13.8	8.1	271	101	189.7	-7.0
32) Совхозы системы «Свинопром»	19.3	9.5	248	92	203.0	-10.7
33) Тамбовская область						
34) Колхозы, совхозы и межхозяйственные предприятия	36.5	10.3	230	103	218.9	-15.1
35) В том числе:						
36) Колхозы	116.2	18.9	171	99	436.4	-11.2
37) Межхозяйственные предприятия	2.9	6.1	342	106	109.8	-28
38) Совхозы системы «Свинопром»	37.9	15.1	160	93	287.1	-78

* Translated into feed units

** Pork produced at a loss

Key:

1. Oblasts and types of enterprises
2. Per 1 quintal of gain of live weight of hogs
3. Labor expended, man-hours
4. Feeds expended,* quintals
5. Average daily gain of live weight of piglets over 2 months old, grams

/Key continued on next page/

Key to Table 1 continued

6. Average live weight of 1 animal sold, kilograms
7. Production cost of 1 quintal of gain of live weight, rubles
8. Level of profitability, %
9. Belgorod Oblast
10. Kolkhozes and sovkhozes
11. Including:
12. Kolkhozes
13. Kolkhozes that perform functions for prok production under principles of interfarm cooperation
14. Sovkhozes of Svinoprom system
15. Voronezh Oblast
16. Kolkhozes, sovkhozes and interfarm enterprises
17. Including:
18. Kolkhozes
19. Interfarm enterprises
20. Sovkhozes of the Svinoprom system
21. Kursk Oblast
22. Kolkhozes, sovkhozes and interfarm enterprises
23. Including:
24. Kolkhozes
25. Interfarm enterprises
26. Sovkhoze of the Svinoprom system
27. Lipetsk Oblast
28. Kolkhozes, sovkhozes and interfarm enterprises
29. Including:
30. Kolkhozes
31. Interfarm enterprises
32. Sovkhozes of the Svinoprom system
33. Tambov Oblast
34. Kolkhozes, sovkhozes, and interfarm enterprises
35. Including:
36. Kolkhozes
37. Interfarm enterprises
38. Sovkhozes of the Svinoprom system

less than 65-70 percent of the overall production outlays. Therefore a changeover to an industrial basis just in the stage of fattening, while retaining ordinary conditions in the stage of reproduction, led to a disproportion in the development of these two fundamental stages in the unified process of pork production. The low level of concentration of the reproduction herd of hogs on the kolkhozes and the ordinary technology for pork production that was retained on them caused the poor productivity of the animals and the poor economic effectiveness of the branch. The production cost of 1 quintal of live mass of piglets by the time they are sent to the interfarm enterprises for fattening amounts to 250-300 rubles and more. When they sell these young animals even at a relatively high calculated price, the reproduction farms sustained losses. The young animals delived from many farms are of poor quality and they do not arrive for fattening regularly throughout the year. All this impedes rhythmic and complete utilization of production capacities of interfarm fattening enterprises, which reduces the effectiveness of their work.

The fact that specialized feed production has not been organized for interfarm enterprises in the zone also impedes the possibilities of developing the hog raising branch. The arrival of feeds from various participating farms does not fully and uniformly satisfy the needs of the animals for them. Moreover, the quality and assortment of the feeds that are delivered do not meet the requirements of intensive hog raising. The allotment of small plots of land to certain interfarm complexes for producing juicy and green feeds does not fully solve the problem of feed production. It can be solved in two ways: by allotting the hog raising enterprise an area of land sufficient for intensive feed production, taking into account the scientific achievements in this area, or by the creation of a specialized feed producing farm which is responsible for complete and uniform provision of full-value juicy, green and granulated feeds for the hog raising complex.

Analysis has shown that two promising forms of organizing hog production are possible in the Central Chernozem Zone with in-depth specialization and interfarm cooperation: one is the hog raising enterprise with a closed production cycle for the given product and developed feed production; the other is the hog raising production association which includes an interfarm enterprise for fattening hogs with the rights of a head enterprise, a farm that specializes in feed production, and farms that deliver piglets to the head enterprise for fattening. The latter form of production organization is characterized by a higher degree of technological specialization and cooperation, and makes it possible to achieve a changeover of all stages of production to an industrial basis. But the organization of hog raising according to this form requires serious work in all stages and units of production.

An example of effective organization of hog raising on the basis of a closed production cycle is the organization of it on the Kolkhoz imeni Frunze in Belgorod Oblast, which carries out functions for producing pork according to the principles of interfarm cooperation. This large hog raising farm has 17,900 hectares of agricultural land, including 15,700 hectares of plowed land. It has basically assimilated industrial technology for pork production. Hog raising is the main branch of the kolkhoz and it produces more than half of the farm's commercial output. Of the crop growing branches the only commercially important one is sugar beet growing, and of the other animal husbandry branches--dairy and meat cattle raising which is technologically combined with the leading branches of animal husbandry and crop growing. This structure of agricultural production provides the kolkhoz with high effectiveness of all branches and efficient utilization of labor resources and production capital.

Pork production on the farm is carried out on the basis of shop organization of labor and intrafarm specialization. The fattening shop can accommodate 15,000 hogs. This complex is located in one place and consists of a system of technologically interconnected premises and structures that provide for uniform pork production throughout the year. Also located here is the mixed feed shop where they do comprehensive processing and preparation of all kinds of feeds for distribution.

The hogs are distributed among the production sections taking into account their optimal concentration on the farms, effective utilization of capital investments and labor resources of the farm and reduction of outlays on

transportation work. Based on this all of the reproduction animals--2,150 basic animals and as many replacement sows--are concentrated in one production section. The main task of this farm is to provide for continuous reproduction of interbreed piglets to be delivered to the shop for raising and then to the fattening complex with an average live weight of 30-35 kilograms.

The farm also has a breeding section which can accommodate 300 sows. Its main function is to reproduce purebred hogs for replacing the reproduction herd of the industrial reproduction farm. Each year this farm delivers 1,000-1,200 replacement sows to the industrial farm.

The system adopted on the farm for hog raising provides for high efficiency of pork production (see Table 2).

Table 2. Main Indicators of Pork Production on Kolkhoz imeni Frunze in Belgorod Oblast

	1975	1976-1980 (annual average)
Piglets delivered for fattening, thousands of head	35.8	43.7
Average daily gain of live weight of 1 head, grams	403	412
Gain of live weight per 1 basic sow, quintals	18.6	20.0
Overall live weight of hogs sold to the state, thousands of quintals	40.6	39.1
Average live weight of 1 head sold, kilograms	108.5	101.6
Per 1 quintal of gain of live weight		
Feeds expended (translated into feed units), quintals	5.6	6.3
Labor expended, man-hours	10.8	8.5
Production cost of 1 quintal of gain of live weight, rubles	97.7	99.68
Level of profitability of hog raising, %	48.9	64.8

The figures that are presented characterize the stable pork production in large amounts with high indicators of economic effectiveness, and they show the efficiency of this form of production organization.

A decisive condition for the development of intensive industrial hog raising is the creation of the necessary feed base. A great deal of attention is devoted to this problem on the Kolkhoz imeni Frunze. Most of the feeds are produced by the farm itself, and only some of the mixed feeds are obtained from state resources through funds of other farms of the rayon who are participants in cooperation. The structure of the planted areas is determined in keeping with the needs of the hog raising branch for the required quantity and quality

of feeds. Grain and pulse crops occupy 63-65 percent of the entire planted area, including grain pulse crops--6-8 percent and feed crops--25 percent. This structure of the planted areas is close to the calculated optimum for this type of farm.

A scientifically substantiated system of agricultural production and comprehensiveness in solving problems of specialized production on this kolkhoz provide it with a high level of production of all kinds of products. Thus in 1980 for every 100 hectares of agricultural land it produced 1,673 quintals of grain, 3,110 quintals of sugar beets, 378 quintals of milk, and 267 quintals of meat, including 240 quintals of pork per 100 hectares of arable land. These indicators show the great effectiveness of the utilization of the land--the main means of production in agriculture.

Another example of effective organization of pork raising is the organization in the Velikiy Oktyabr' interfarm enterprise in Voronezh Oblast. The enterprise was created in 1968 with funds from 21 kolkhozes and 2 sovkhozes. More than 13 million rubles were spent on the construction of the hog raising complex. At the present time the complex of the interfarm enterprise consists of shops for reproduction raising and fattening (with shops that provide green and juicy feeds for the animals maintained here), for storage and processing of feeds, and also a shop for mechanization and electrification. In 1980 in the reproduction shop they obtained 33,600 piglets, or 42 percent of all of those that were sent for fattening. The rest of the piglets were received for fattening from participating farms. The piglets are weaned at 35 days of age, when they reach an average live weight of 7.5-8 kilograms.

The fattening shop has 21 standard premises with an overall capacity to accommodate 32,000 head. The animals being fattened are kept 18-20 head in a stall; the fattening is done with dry feeds from 4 to 8-9 months of age. Upon the completion of fattening (mainly to meat and meat-fat conditions), when the animals reach a live weight of 112-115 kilograms, they are sold to the state. All labor processes for fattening are mechanized and partially automated.

For processing and preparing feeds for distribution, a well equipped feed shop with a productivity of 70 tons of mixed feeds per shift has been constructed at the complex. All processes here are mechanized and automated. The existing technical equipment makes it possible to process 8 kinds of mixed feeds which contain up to 12 components and various trace supplements. The area of agricultural land assigned to the interfarm enterprise is 2,744 hectares, of which 2,352 hectares are arable land. On this area they have organized the production of feeds for the hog raising complex--mainly juicy, green and grass meal made of perennial pulse grasses.

The principle of organization of the interfarm enterprise presented here makes it possible to efficiently conduct industrial hog raising with a high economic effect, which is clear from Table 3.

The Velikiy Oktyabr' interfarm enterprise fully keeps up with the program for the production of commercial pork in the rayon and the sale of high-quality pork to the state. With the creation of this enterprise pork production in the rayon as a whole became profitable.

Table 3. Main Indicators of Operation of Velikiy Oktyabr' Interfarm Enterprise (average annual figures)

	1971-1975	1976-1980
Piglets obtained, total, thousands of head	26.6	34.3
Piglets obtained per 1 basic sow, head	17.4	19.2
Number of farrows per 1 basic sow	2	1.8
Hogs sold to the state with overall live weight, thousands of quintals	58.1	70.5
Average daily live weight gain of 1 head on fattening, grams	444	462
Feed expenditures (translated into feed units) per 1 quintal of live weight gain, quintals	6.06	6.2
Including in fattening stage, quintals	5.9	5.7
Labor expenditures per 1 quintal of live weight gain, man-days	0.68	0.60
Including in fattening stage, man-days	0.36	0.30
Production cost of 1 quintal of live weight gain, rubles	70.89	85.2
Profit for hog raising complex, thousands of quintals	3,321	3,029.4
Level of profitability, %	56.0	36.2

Cooperation in beef production has been extensively developed in the zone. In 1980 there were 154 interfarm enterprises and specialized farms in operation, which produced 31.2 percent of the overall volume of this product on the kolkhozes and sovkhozes. In 1976-1980 as compared to 1971-1976 the average annual beef production in the interfarm formations increased 1.7-fold.

The figures presented in Table 4 show that beef production is efficient only at interfarm enterprises and on specialized farms. This is explained by the fact that these formations only fatten the livestock. On kolkhozes and sovkhozes that engage in reproduction of young animals and raising them to 6-7 months of age beef is produced at a loss.

An analysis of the organizational and production structure of various interfarm formations for producing beef shows essential differences in this structure and the need to improve it in the direction of deepening specialization through separating the stage of raising and completion of raising of young animals into a specialized technological stage of production on the basis of the creation of shops for raising young animals at large fattening complexes or organizing specialized farms for this. On the whole this complicated process is developing extremely slowly in the zone.

Table 4. Economic Indicators of Beef Production at Various Types of Enterprises of Oblasts of the Central Chernozem Zone, Average for 1976-1980

(1)	Области и типы предприятий	В расчете на 1 т живой массы скота		(52) живой массы, т	(6) живой массы, т
		2) затрачено труда, з/ч	3) затрачено на выращивание кормов*, ц		
(7)	Белгородская область				
(8)	Колхозы и совхозы	47,65	11,53	178,89	-4,5**
(9)	в том числе:				
(10)	специализированные колхозы, выполняющие функции по откорму крупного рогатого скота на принципах межхозяйственной кооперации	17,76	11,4	140,83	9,0
(11)	совхозы системы «Скотопром»	11,5	7,43	123,24	3,5
(12)	Воронежская область				
(13)	Колхозы, совхозы и межхозяйственные предприятия	46,53	10,06	171,15	-1,2**
(14)	в том числе:				
(15)	межхозяйственные предприятия	4,61	7,84	122,78	32,5
(16)	специализированные колхозы, выполняющие функции по откорму крупного рогатого скота на принципах межхозяйственной кооперации	29,51	9,79	144,75	12,9
(17)	совхозы системы «Скотопром»	14,20	10,15	101,90	62,9
(18)	Курская область				
(19)	Колхозы и совхозы	67,21	14,06	192,27	-13,4**
(20)	в том числе выполняющие функции по откорму крупного рогатого скота на принципах межхозяйственной кооперации:				
(21)	колхозы	32,77	11,07	151,30	14,8
(22)	совхозы	16,4	10,89	123,12	74,1
(23)	Липецкая область				
(24)	Колхозы и совхозы	51,41	12,54	214,07	-2,1**
(25)	в том числе совхозы, выполняющие функции по откорму крупного рогатого скота на принципах межхозяйственной кооперации	14,37	11,9	155,13	70,3
(26)	Тамбовская область				
(27)	Колхозы, совхозы и межхозяйственные предприятия	47,61	12,56	234,45	-25,6**
(28)	в том числе:				
(29)	межхозяйственные предприятия	5,42	10,42	153,29	23,5
(30)	совхозы системы «Скотопром»	17,94	12,2	177,80	26,5

Key:

1. Oblasts and types of enterprises
2. Per 1 quintal of live weight of cattle
3. Labor expended, an-hours
4. Feeds expended,* quintals
5. Production cost of 1 quintal of live weight, rubles
6. Level of profitability, %
7. Belgorod Oblast
8. Kolkhozes and sovkhozes
9. Including:
10. Specialized kolkhozes that perform functions for fattening large horned cattle on principles of interfarm cooperation

Key continued on next page

/Key to Table 4 continued/

11. Sovkhozes of Skotoprom system
12. Voronezh Oblast
13. Kolkhozes, sovkhozes and interfarm enterprises
14. Including:
15. Interfarm enterprises
16. Specialized kolkhozes that perform functions of fattening large horned cattle on principles of interfarm cooperation
17. Sovkhozes of Skotoprom system
18. Kursk Oblast
19. Kolkhozes and sovkhozes
20. Including those that perform functions for fattening large horned cattle on principles of interfarm cooperation
21. Kolkhozes
22. Sovkhozes
23. Lipetsk Oblast
24. Kolkhozes and sovkhozes
25. Including sovkhozes that perform functions for fattening large horned cattle on principles of interfarm cooperation
26. Tambov Oblast
27. Kolkhozes, sovkhozes and interfarm enterprises
28. Including:
29. Interfarm enterprises
30. Sovkhozes of Skotoprom system

Intensive raising of young animals should be started at 20 days of age in order to take maximum advantage of the biological potential of the animals and provide for the production of products with the least expenditures.

Improvement of the structure of the basic production will make it possible to improve the system of administration and to join all of the separated parts of production (reproduction, raising and fattening of young animals and feed production) into a unified, rhythmic process, and to reduce expenditures on the production of products. Research shows that under the zone's conditions the most efficient organization for young animals that are being intensively raised from 20 days of age is a complex for 7,000-9,000 head with an annual volume of beef production of 25,700-31,200 quintals. The organization of farms for raising young large horned cattle should be accompanied by deepening of specialization and improvement of their organizational-production structure in order to provide for increased production of the main kind of product--beef, which determines the economy of this type of enterprises.

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DISEASE PREVENTION, TREATMENT IN SIBERIA, FAR EAST

Omsk ZEMLYA SIBIRSKAYA, DAL'NEVOSTOCHNAYA in Russian No 5, May 83 pp 2-3

[Article by Candidate of Veterinary Sciences S. I. Dzhupina, director of the Institute of Experimental Veterinary Science of Siberia and the Far East, and Candidate of Biological Sciences P. N. Nikonorov, head of the Laboratory of Veterinary Problems in Industrial Cattle Breeding: "The Veterinary Shield of Animal Husbandry"]

[Text] The increase of the preservation of the animal population, the increase of its productivity and the assurance of a high level of reproduction are of great importance in the accomplishment of the responsible tasks of the Food Program on the increase of the production of livestock products at the sovkhozes and kolkhozes of Siberia and the Far East. The most important task of the workers of animal husbandry, the managers and livestock veterinary specialists of every farm is to use for this all the available reserves and possibilities.

The task is responsible and complicated, especially at the farms where due to the shortage of fodders and their low quality a decrease of the productivity is being permitted, the morbidity of the population is increasing. The prevention and elimination of infectious diseases and the increase of the preservation of young animals and the reproductive functions of the female animals are an important reserve of the increase of the population of animals and poultry and the increase of the production of livestock products. The settlement of these questions in many ways depends on the level of work of the veterinary specialists of the stock farms, farms and the state veterinary network. The achievements of many leading veterinarians and veterinary assistants of our zone clearly attest to this. Chief veterinarian N. G. Zhidkov of the Yagodnyy Sovkhoz, chief veterinarian A. M. Padalitsa of the Krasnoye znamya Kolkhoz and G. P. Shkuratov, a veterinary assistant of a department of the Tsentral'nyy Sovkhoz (Novosibirsk Oblast), who are ensuring the high preservation of livestock (up to 99 percent), enjoy deserved prestige among stock breeders. The veterinary service of the Abakan Hog Complex (chief veterinarian P. A. Bocharov) last year saved 97.3 percent of the hogs, while the veterinary specialists of Shushenskiy Rayon of Krasnoyarsk Kray (chief veterinarian S. A. Dovgan') saved for all the served farms 98.9 percent of the cattle, 98.8 percent of the hogs and completely eliminated the illness of large-horned cattle with brucellosis.

The great effectiveness of the existing system of preventive veterinary measures on the protection of farms and complexes has been substantiated by veterinary science and confirmed by practice.

The operating conditions of enterprises of the closed type should be strictly observed at all complexes and livestock farms. They are ensured by an external barrier and an admission system of transportation traffic and personnel with the mandatory operation of veterinary health disinfection centers. Unfortunately, many farms of our region still do not have these facilities, the traffic pattern is being violated, the constant threat of the accidental bringing in of pathogens of infectious diseases is being created. Therefore the managers and livestock veterinary specialists of the farms and agricultural organs should elaborate and carry out in a systematic manner the enclosing of the livestock farms, the construction and equipment of veterinary health disinfection centers and other veterinary facilities.

It is no less important to implement constantly and strictly according to a schedule measures against epizootic diseases. Now, prior to the transfer of the population to summer camp and pasture keeping, it is necessary to vaccinate the livestock in good time against anthrax, gangrene, pasteurellosis, leptospirosis, listeriosis and other infections, to worm them, to treat them against the warble fly and to perform other mass measures with allowance made for the specific epizootic situation. Here it is important to ensure the complete coverage of the population, including the livestock of the private sector, and to strictly observe the instructional rules of vaccination and treatments.

Veterinary health and preventive measures should be included as obligatory elements in the technology and organization of production of every livestock farm and complex. It is necessary to include the carrying out of quarantining, isolation, disinfections and rat exterminations, veterinary health treatments and veterinary examinations of livestock in the case of arrival and technological transfers, the housing and attendance of sick animals in the industrial and financial plans and the work schedules and to provide all the conditions for their timely performance.

The freeing of unfortunate farms from the brucellosis and tuberculosis of large-horned cattle is the most important task of the managers of livestock farms and farms, veterinary specialists and agricultural organs of a number of oblasts and krays of the region. In recent years the farms of Maritime Kray, Chita Oblast and the Buryat ASSR were freed of brucellosis, the farms of Kemerovo and Tomsk Oblasts were freed of tuberculosis. The freeing of livestock farms from brucellosis is being successfully carried out in Altay, Krasnoyarsk and Khabarovsk Krays. However, in a number of rayons of Omsk, Tyumen and Novosibirsk Oblasts and other zones the epizootic situation continues to remain complicated.

Not only timely diagnostic studies and the identification of sick animals, but also their separation from the herd as the main source of infections are the most important section of the measures on the freeing from brucellosis and tuberculosis. The questions of the immediate isolation of reacting animals, their slaughter and the replacement of the population of unfortunate livestock farms with healthy livestock should be raised in a well-founded manner and settled by veterinary specialists jointly with the executives of the farms and agricultural organs of the rayons. For their optimum settlement at the unfortunate farms and rayons it is necessary first of all to organize the raising of healthy calves for replacement, and as needed their delivery from other fortunate rayons. Reserves and possibilities for the implementation of these measures exist, since at many farms of the region up to 15-25 percent of the calves are being sent for meat production.

It is completely intolerable when at individual farms all the sanitation work is reduced only to the vaccination against brucellosis and diagnostic studies for tuberculosis and brucellosis, while measures on the sanitation of the environment are not being performed. The cleaning and disinfection of barns and the grounds, sanitary repairs, the disinfection of manure, the routine pasteurization of milk and skimmed milk and the observance at unfortunate livestock farms of the livestock hygiene and veterinary health norms and rules of housing and technology are indispensable conditions of the successful freeing of animal husbandry from infections.

Fundamental plans of health improvement, including the implementation of special veterinary measures with allowance made for the specific epizootic situation of the farms, have been approved by directive agricultural organs on the basis of the studies of veterinary scientific institutions of the region and the country. Their practical implementation under the procedural supervision of scientists of the region along with the performance of organizational and economic measures will make it possible in the next few years to improve the health of unfortunate herds and to reliably prevent infections.

The sharp decrease of the morbidity and loss of livestock from noncontagious diseases, especially young animals, and the infertility of female animals, which today are doing the main harm to the sector, is a significant reserve of the fulfillment of the Food Program with respect to the increase of the production of live-stock products.

It is well known that the animals, which have become ill with and have recovered from noncontagious diseases, for their most part decrease in productivity by 15-30 percent, the young animals lag in growth and development, symptomatic infertility sets in among female animals. The effectiveness of treatment in the case of gastrointestinal and pulmonary diseases of young animals being born, diseases of the hooves of livestock and other diseases is very low, and this leads to even more significant losses from epizootic disease and forced slaughtering. Therefore, first of all the reliable prevention of diseases should be the main direction in the practical activity of the managers of livestock farms and veterinary and livestock experts.

In recent years substantial steps on the improvement of the fodder base of animal husbandry have been taken at the farms of Siberia and the Far East in light of the demands of the CPSU Central Committee. The amount of fodders being procured will increase with each year, while their quality will improve. A responsible task of veterinary specialists in this matter is the systematic monitoring of the adherence to the technology of the procurement and storage of fodders, as well as laboratory veterinary health checks of their quality before feeding. It is no less important jointly with the livestock service on the basis of the data of studies of the chemical composition and food value of all the fodders of the farm to organize the enrichment of the rations with the lacking macroelements and trace elements.

The complicated veterinary problem of quasipathogenic infections arose with the consolidation of livestock farms, the construction of complexes and the extensive industrialization of the technology in animal husbandry. The concentration of the population and its constant shifts through the technological cycle, the adverse influence of some elements of industrial technology on the natural resistance of the newly created conditions, under which the usual microflora of the body of animals or

the livestock barn can accumulate in significant quantities, can become complicated with respect to the specific composition, can increase its pathogenic properties and as a result can cause gastrointestinal and respiratory diseases among young animals, postnatal complications and mastitis among female animals, purulent and necrotic processes in the area of the hooves and other diseases.

The principles of the reliable prevention of these diseases on the basis of the use of flow line-shift processing methods ("all busy--all empty"), the essence of which consists in the creation of isolated sections or individual barns for a specific technological portion of the herd, the simultaneous filling or filling in a short time of each section, its complete emptying of animals or poultry upon completion of the technological cycle, the careful cleaning, washing and disinfection of the facility and equipment and its holding without livestock for not less than 3 days, have been substantiated by veterinary science. The breaking of the epizootic chain and the elimination of quasipathogenic microflora are achieved by this.

The scientific institutions of Siberia and the Far East (the Siberian Scientific Research Veterinary Institute, the Institute of Experimental Veterinary Science of Siberia and the Far East, the Siberian Scientific Research, Planning and Technological Institute of Animal Husbandry, the Krasnoyarsk Scientific Research Veterinary Station, the Tomsk State Agricultural Experimental Station and others) have elaborated and substantiated scientifically versions, which are effective under our conditions, of the equipment and operation of sectional veterinary dispensaries, delivery sections and calf houses, delivery and dispensary blocks, boxes (stalls) for calvings, which make it possible to successfully eliminate and prevent gastrointestinal and respiratory diseases of calves and postnatal gynecological diseases among cows.

At the same time the Institute of Experimental Veterinary Science of Siberia and the Far East has substantiated technological solutions, which ensure the prevention of respiratory diseases of calves, including the age isolation of calves of the milk period (3-4 months) from the population of older ages, the separate housing of calves of summer calvings from the young animals of the winter calving, the creation of isolation sections of the calf houses in accordance with the norm of the workload per worker and their shift use. Their use at the Barabinskiy Sovkhoz, the Bol'shevik Kolkhoz, the Zavodskoy and Priobskiy Sovkhozes of Novosibirsk Oblast, the Experimental Model Farm imeni B. N. Sidorenko of Tomsk Oblast, the sovkhozes of Omsk Oblast and many other farms made it possible to successfully eliminate and prevent many diseases.

Along with the implementation of preventive measures the further improvement and increase of the effectiveness of treatment work are an urgent task of veterinary specialists. It is necessary to introduce extensively everywhere the organization of medical and health stations, which has justified itself, especially in sheep raising and at large cattle breeding enterprises and farms. Under the conditions of a great load of the livestock population on veterinary personnel the group methods of treatment and prevention should be used extensively. Among them are the aerosol methods of vaccination, preventive medical treatments in the case of pulmonary diseases of young animals, fodder granules with worming additives and trace elements in the form of premixes, foot treatment and preventive disinfecting baths in the technological flow and much more.

and frontier diseases, which are caused by quasipathogenic microflora. It is necessary to study its sensitivity to antibiotics and to use a combined therapy with antibiotics, sulfanilamides and compounds of the nitrofuran series.

It is necessary to use more extensively the accessible dietetic and protective fodders and agents. At each farm by the forces of the workers of animal husbandry with the use of the assistance of school children it is expedient during the summer to produce medicinal herbs, to organize the production of acidophilus ferments and to obtaining of acidophilus cultures, PABA and artificial gastric juice and to use them extensively.

For the increase of the effectiveness of treatment and preventive work it is necessary to create at every livestock farm the minimum necessary conditions for their performance. It is expedient to concentrate sick and weakened animals at hospitals, whatever they do not exist, in special medical and health groups, to provide them with force and dietetic feeding and considerate care, to interest the attendants and veterinary specialists materially in the restoration of the health and productivity of this population. It is also necessary to show concern about the work of the veterinary specialist. Unfortunately, at many livestock farms there are still no veterinary centers, pharmacies and holding devices for the mass veterinary treatment of livestock. At every livestock farm it is necessary to provide a workroom of the veterinary specialist by means of auxiliary rooms and vestibules.

The preparation and changeover of animal husbandry to summer keeping are now underway at the livestock farms. It is necessary to use this season of the year as much as possible for the substantial increase of the production of products and the increase of the animal population. Along with the completion of spring preventive treatments it is necessary to think out and implement a set of measures on the improvement of the health of the herd and the prevention of diseases under summer conditions and to carry out the careful preparation of the livestock barns for the next wintering.

Veterinary science of the region has to accomplish responsible tasks and first of all to develop more effective systems of veterinary measures, methods and means of the prevention, diagnosis and treatment of infectious, invasive and noncontagious diseases of animals and the improvement of the livestock farms. It is possible to accomplish this only in constant creative cooperation with experienced veterinary specialists and with the assistance of agricultural organs. The complete settlement of the questions of the assurance of the reliable veterinary well-being of animal husbandry is an important link in the accomplishment of the Food Program.

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PRIVATE PLOT LIVESTOCK PRODUCTION, RABBIT-RAISING SOCIETIES DISCUSSED

Moscow SEL'SKAYA ZHIZN' in Russian 7 Jul 83 p 2

Article by N. Dergachev, economist: "Prompted By Experience"

Text Public opinion, which is closely associated with the private plots of the rural population, requires a thorough analysis of the processes taking place and a search for more efficient operational methods. As a result of measures adopted by the party and government, the number of livestock and poultry on rural farmyards is increasing. Compared to early 1984 when the number of large-horned cattle had increased by 370,000 head, by the beginning of this current year the increase was 672,000. The kolkhozes and sovkhozes are more actively concluding contracts for the raising of young stock on private plots. The population is being provided with more assistance in acquiring livestock and poultry and in obtaining veterinary services and feed. Almost 5 million hectares of natural haying land and more than 10 million hectares of pasture land are being provided annually for hay procurement purposes and for the grazing of cattle.

Nevertheless, despite the unquestionable positive advances in the work of combining public production with the private economy, many rural residents are still unable to acquire young livestock and poultry and those who are able to do so are experiencing difficulties in obtaining feed. Nor is it an accident that the farms in Kazakhstan, for example, have reduced the number of hogs and poultry being maintained on private plots. Yes and in other regions of the country some kolkhoz and sovkhoz leaders are not displaying proper concern for farmstead animal husbandry and as a result the people are beginning to neglect their production operations.

It is believed that the experience accumulated in the development of amateur rabbit breeding in Kirghizia, Moldavia, Krasnodar and Stavropol Krays and in Volgograd, Leningrad, Moscow and a number of other oblasts throughout the country can be quite instructive here. It is typical that rabbit breeding is developing successfully in these regions despite an increase in the retail prices for mixed feed. There were earlier periods when certain adverse factors either did or should have exerted an influence on the development of this branch. In order to halt the process of curtailment of this domestic economy, cooperation specialists performing in the role of product procurement specialists began creating amateur societies (associations) for the purpose of publicizing the principles of rabbit breeding on an extensive scale.

The results were immediately forthcoming. In those areas where the societies began operating in an active manner, where sales-exhibits for the animals were conducted and where concern was displayed for the needs of the amateurs, their number increased as did also the sales volumes for the products. For example, there were 596 such collectives in Moldavia. They include 86,000 amateurs who during 1982 furnished 1.71 million rabbit pelts and 4,161 coypu pelts.

It can be stated with confidence that if similar work had been carried out in connection with a broad range of problems associated with management of the private plots, a considerable increase would have taken place in the number of people engaged in farmstead farming and animal husbandry and increases would have been recorded in the volumes of their products added to the state's resources or shipped to kolkhoz markets.

An individual who joins a rabbit raising association enters a special psychological climate. He becomes a member of a society which wishes him to engage in the raising of small animals. He is guaranteed the sale of mixed feed, he is provided with zootechnical assistance and many societies are even prepared to procure the products directly at the site. They may even organize the counter sale of goods which are in high demand.

In principle, such mutual relationships can develop during the conclusion of a contract with a kolkhoz or sovkhoz for the raising of a calf or young pig. Nevertheless, there is a difference. A worker is definitely dependent upon his kolkhoz or sovkhoz from an administrative standpoint. If a problem develops, he may be reproached by his fellow workers, the farm leader or the brigade or team leader.

At first glance this might seem to be a minor factor and yet it must be taken into account. In addition, one must also consider the psychology of a peasant, who does not like to be reproached and who places a high value upon his honor.

This circumstance represents one of the reasons why many rural residents do not wish to burden themselves with obligations in behalf of a kolkhoz or sovkhoz. Many prefer to raise livestock and poultry in the absence of a contract and later to deliver them to the procurement organizations or to sell them at municipal kolkhoz markets. One can understand their position when it is recalled that never before had they concluded such contracts with their kolkhoz or sovkhoz or raised livestock, poultry and small furry animals on the basis of obligations. Rather they raised them based upon their own inclinations and willingness.

The operational experience of amateur rabbit breeder societies reveals that they eliminate a type of psychological barrier and promote renewed interest in the work of the societies. Taking all of this into account, it is believed that it would be advisable, based upon the existing societies, to create voluntary amateur societies for domestic animal husbandry, poultry raising and fur farming.

Since the principal task of these collectives will be that of producing and procuring animal husbandry products, they must operate under the command of agroindustrial associations.

amateur societies assist the kolkhozes and sovkhozes in the sense that the latter are released from having to display concern for the development of the private plots.

The acquisition of young stock, the presentation of pasture and haying land and the sale of finished products -- the range of responsibilities of these amateur societies can be extensive.

It can be stated with confidence that the merging of owners of private plots into voluntary collectives of amateur livestock breeders, poultry raisers and fur farmers will promote greater interest among the population in this important work.

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AGRO-ECONOMICS AND ORGANIZATION

PROCUREMENT PRICING, PRODUCTION PROFITABILITY OF UZBEK COTTON

Tsentr. EKONOMIKA I ZHIZN' in Russian No 4, Apr 83 pp 60-62

Article by A. Tsumutali, doctor of economic sciences: "Accounting for Objective Factors"

[Text] Development and increased efficiency of agriculture is impossible without stable economic conditions. "Now, unfortunately," it was noted at the 26th (1982) Plenum of the CPSU Central Committee, "such conditions exist far from everywhere. Many kolkhozes and sovkhozes operate at a loss . . . the reasons for this situation are varied. But there is one result--price, profit and credit forfeit their role as economic levers and do not stimulate growth or reduction."

This is the situation in cotton growing as well. During 1965-1981 the production of raw cotton on cotton growing kolkhozes of the Uzbek SSR increased from 2.7 to 3.5 million tons, productivity increased from 26 to 36.5 quintals per hectare, and the gross output per hectare of arable land increased from 1,085 to 2,247 rubles. But the net income per 1 hectare during this period decreased from 1,112 to 455 rubles. This led to a reduction of the profitability of cotton growing from 41.2 to 20.4 percent.

The meaning of this is expressed even more clearly in the figures that characterize the activity of the kolkhozes of Andizhan Oblast. Here the gross output per 1 hectare of arable land during the period under consideration increased from 1,080 to 1,889 rubles, the productivity of raw cotton--from 27.6 to 33.9 quintals per hectare, but profitability dropped from 38.6 to 6.4 percent. In 1981 37 farms in this oblast throughout the branch operated at a loss.

Today the main reserve for increasing cotton production is to increase its productivity on the basis of intensification. Under these conditions increasing fixed production capital acquires primary significance since it largely determines the rates of reproduction. A study of this problem in the farms of Andizhan Oblast showed that the greater the provision of fixed production capital, the higher the productivity and profitability.

On an average for the kolkhozes of the republic the provision of fixed production capital per hectare of arable land is 2,200 rubles, which is two-fifths of the normative. Yet accumulations in the kolkhozes during recent

irs have considerably decreased and do not provide for implementing the basic measures for intensification of production. The accumulation fund per hectare of arable land in the republic dropped from 824 rubles in 1965 to 318 rubles in 1980. And in Andizhan Oblast there was a 3.7-fold decrease during this period.

Measures earmarked by the May Plenum of the CPSU Central Committee will contribute to equalizing the level of production among the groups of farms and advancing cotton growing. The policy of financing with funds from the state budget has been extended to kolkhozes that do not have adequate fixed capital or their own means for carrying out reproduction for the following planned expenditures: the construction of residential buildings, cultural and personal facilities and intrafarm roads, the maintenance of children's preschool and cultural-educational institutions, and insurance payments. In the country as a whole 3.3 billion rubles per year are being allotted for these purposes.

An important measure for ensuring further development of production on economically weak farms is to write off their debts and change the policy for withholding income tax. In Uzbekistan the kolkhozes have been relieved of payments for debts amounting to 43 million rubles and their payments have been postponed for 58 million rubles' worth of credit that was obtained previously.

Among all the forms of interrelations between kolkhozes and the state procurement prices for raw cotton have a decisive influence on the development of public production. In postwar years they have repeatedly been brought into line with the changing production conditions. And whenever the prices were established at a level that provides for reimbursement of material expenditures, expenditures on wages and the formation of the necessary net income, the economy of public production of the kolkhozes has immediately reacted to this with a sharp increase in the production of raw cotton.

Our research has proved that the optimal level of profitability of cotton growing is 45 percent. The average sales price for 1 quintal of raw cotton of 66.13 rubles corresponds to this. During the past 3 years on the kolkhozes of the republic the average earnings per quintal of raw cotton amounted to 55.95 rubles. Consequently, it should be increased by 18.2 percent.

The decisions of the May Plenum allotted 16 billion rubles for raising procurement prices for products of the food branches. As we know, cotton growing is also very important in carrying out the Food Program, especially in the development of animal husbandry. Taking this into account, it would be expedient to single out a certain proportion for cotton growing from the overall funds directed toward stimulation of the purely food branches.

The task of planned price setting in agriculture and control of production consists in taking into account the differences in objective production conditions and providing for the development of cotton growing on all forms. The change-over in this branch in 1958 from unified prices to differentiated prices for the various zones was an important step in the creation of equal possibilities for all normally operating farms to develop production. Prices for raw cotton were differentiated for 3 zones (groups of rayons) in conformance with the zonal production cost. Thus in the first price zone of kolkhozes of Andizhan Oblast

land was evaluated at 73 points, in the second--80 points, and in the third--81 points. Correspondingly, the production cost of a quintal of raw cotton amounts to: 45.3, 42.9 and 42.2 rubles. The average sales price of a quintal of raw cotton in the various zones is: 52.4, 48.9 and 47.9.

It is as though the procurement prices take into account the quality of the land. But practice shows that differentiation among the zones, which include the administrative rayons, does not account for intrazonal differences in the quality of the land, production cost and productivity. And they are much greater than interzonal differences. Thus in the first zone the range on the farms of the quality of land is from 58 to 77 points, in productivity--from 29.5 to 38 quintals per hectare, in production cost of a quintal of raw cotton--from 39.2 to 51 rubles, and in profitability--from 2.9 to 28.8 percent. The quality of the land in the farms of the third zone ranges from 65-97 points, and profitability--from 0 to 34 percent. In the second zone, along with farms that operate at a loss there are farms with profitability of up to 31 percent.

The present system of procurement prices does not provide all farms with equal opportunities of developing public production. In one and the same price zone the profitability differs within a wide range--from minus profitability to 34 percent. Even within the framework of one administrative rayon there are significant differences in the objective conditions for production, and primarily in the productive capacity of the soil, of up to 30-40 percent.

With the existing zonal procurement prices for large territories that include dozens of rayons the same autonomous financing norms are applied. This approach to farms that are operating under unequal conditions greatly reduces the effectiveness of economic measures for influencing the development of the kolkhozes and leads to a situation where certain farms operate at a loss and cannot bring themselves up, others are not very profitable and still others receive unjustifiably high incomes. Great differences arise in the level of wages, accumulations, and capital availability, which reduces the growth rates of labor productivity.

The differentiation of prices which exerted a positive influence on the development of agricultural production does not meet modern requirements. The main thing in the problem of differentiation of prices today is to account not for interzonal, but intrazonal and intrarayon differences in the conditions for production, which are reflected in the productivity, outlays and profitability. It is necessary to account more fully for individual conditions of kolkhozes and to equalize the incomes of farms that are operating with various outlays. Farms which carry out production under relatively worse natural and economic conditions and have higher outlays should be given a higher price for raw cotton, and kolkhozes with better conditions and with relatively smaller outlays should be given a lower price.

The differentiation of procurement prices for the various groups of farms should be based on the theoretical production cost of raw cotton. It is calculated on the basis of a multifactorial model of the production cost of cotton which includes the following indicators: the value of fixed production capital, circulating material capital, productivity, labor expenditures and wages, the quality of the land and indirect expenditures.

Table 1. Differentiation of Prices for Cotton on Kolkhozes of Andizhan Oblast, Taking Objective Production Factors Into Account.

Indicators	Groups of kolkhozes by level of theoretical production cost of 1 quintal of cotton (rubles)		
	up to 40.0	40.1-45	45.1 and more
1. Number of kolkhozes	30	61	12
2. Quality of land (points)	81	80	79
3. Productivity of cotton plants (quintals per hectare)	33.9	33.7	32.6
4. Labor expenditures per 1 quintal of cotton (man-hours)	31.6	34.2	34.9
5. Wages per 1 man-hour (rubles)	0.73	0.74	0.83
6. Actual production cost of 1 quintal of cotton (rubles)	39.49	43.09	48.20
7. Actual sales price of 1 quintal of cotton (rubles)	47.94	48.26	51.99
8. Actual profitability of cotton growing (%)	21.4	12.0	7.9
9. Theoretical production cost of 1 quintal of cotton (rubles)	38.59	42.12	47.14
10. Optimal profitability of cotton growing (rubles)	45	45	45
11. Calculated sales price of 1 quintal of cotton (rubles)	55.95	61.07	68.35

In other words, the theoretical production cost of a quintal of raw cotton characterizes the cost which should exist on a specific farm with the existing values of objective production factors and the average level of their utilization. Its amount for kolkhozes of Andizhan Oblast averages 41.55 rubles, and on individual kolkhozes it ranges from 35.57 to 52.07 rubles.

The production cost of a unit of output in the various groups of kolkhozes, taking objective production factors into account, amounts to 38.59 rubles in the first group of farms, 42.12 rubles in the second, and 47.14 rubles in the third. These should be the outlays for the various groups of farms with the average achieved level of administration of the public farm and the average

level of utilization of the basic factors in production. Therefore the prices for the various groups of farms should be established taking these outlays into account.

As was already mentioned, the optimal level of profitability in cotton growing is 45 percent. Then the average procurement price of a quintal of raw cotton should be: in the first group of farms--56 rubles, in the second group--61 rubles, and in the third group--68 rubles. As we can see, the difference between the extreme groups of farms amounts to 12 percent instead of the present 8 percent.

The objective need and the economic expediency of differentiation of prices for raw cotton were recognized by the majority of practical and scientific workers even before now. But without an overall rise in the average level of procurement prices this measure could be implemented only by reducing them in a considerable group of farms. This also basically impeded the solution to the problem. But now, since the May Plenum of the CPSU Central Committee, when, in keeping with its decisions, funds will be allotted for increasing procurement prices in cotton growing, favorable conditions are being created for deepening the differentiation. This measure will make it possible to take into account much more fully the specific conditions for production in individual microzones and farms. The incomes of the kolkhozes will depend not on their location, but on the level of production organization, labor productivity and the production cost of raw cotton. All kolkhozes will be motivated to maximally mobilize reserves for optimizing the ratio between expenditures and increased production efficiency.

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AGRO-ECONOMICS AND ORGANIZATION

GOSBANK CREDIT EXTENSION TO SUBSIDIARY INDUSTRIAL ENTERPRISES EXAMINED

Moscow DEN'GI I KREDIT in Russian No 5, May 83 pp 44-46

Article by G.P. Vasil'yeva, deputy chief of the Credit Administration for Heavy Industry of the Russian Republic Office of Gosbank and G.N. Lenkova, department head: "The Bank and the Development of Subsidiary Farms"

Text The development of subsidiary farms at industrial enterprises in the RSFSR commenced following the adoption of Decree No. 985 of the CPSU Central Committee and the USSR Council of Ministers, dated 4 December 1978, entitled "Subsidiary Farms of Enterprises, Organizations and Institutes." During 1979 and 1980 the greatest number of them were organized in Ivanovo, Arkhangelsk, Sverdlovsk, Kaluga, Vladimir, Gorkiy and Lipetsk Oblasts, in the Maritime and Krasnoyarsk Krays and others.

In the Food Program approved during the May (1982) Plenum of the CPS Central Committee, a great amount of attention is also given to developing the subsidiary farms of enterprises and organizations. In the process it is noted that mandatory and systematic assistance furnished to these farms can produce rapid and perceptible results. Thus considerable capital investments will be allocated for the development of these farms during the 11th Five-Year Plan.

An important role in this regard will be played by the institutes of Gosbank, which are charged with furnishing assistance to industrial enterprises in the development of subsidiary farms, by extending loans to them for covering the expenses required for organizing and expanding the logistical base. At the same time, they must exercise control over the placing of installations in operation within the established periods and also over the timely repayment of loans issued.

A practical study carried out on the extension of loans to cover expenses for organizing and expanding the logistical base for subsidiary farms at enterprises and organizations of 12 ministries and departments reveals that of the number of farms studied in 1980 and 1981, 208 subsidiary farms were created by means of Gosbank credit. Credit in the amount of 31.6 million rubles was extended for this purpose. The overwhelming majority of the enterprises are building pigsties, hog complexes, hothouses, calfhouses and poultry houses, that is, attention is being given to increasing the production of meat and dairy products.

Allow me to cite some specific examples which describe the degree and effectiveness of the use of credit allocated for the development of subsidiary farms. The construction of subsidiary farms at enterprises in Gorkiy Oblast, using bank credit, is being carried out at 50 installations, of which 39 have already been placed in operation. This has made it possible to obtain 2.7 million rubles worth of additional agricultural products annually. The proportion of credit in the capital investments for the development of subsidiary farms in the oblast is increasing: in 1980 it amounted to 33 percent and in 1981 -- 51 percent.

Enterprises of the Gor'kles Association are making active use of bank credit. Of 17 subsidiary farms representing an overall estimated fixed capital value of 0.5 million rubles, 11 installations were built by means of bank loans in the amount of 0.4 million rubles. In particular, the Vakhtan lespromkhoz [timber industry farm], using bank credit in the amount of 100,000 rubles placed a pigsty for 100 head in operation in 1980 and in 1981 -- a cow barn for 50 cattle. These installations are being utilized at full capability and the farm is producing a profit.

The Gorkiy Forestry Administration is employing credit extensively for the development of subsidiary farms. In 1980 and 1981 it was issued loans amounting to approximately 0.7 million rubles; the proportion of credit in forming the fixed capital of the subsidiary farms in this administration was 72 percent. This year the plans call for 2 more cow barns and 6 pigsties to be placed in operation, with credit in the amount of 0.6 million rubles having been authorized for this purpose. The funds allocated are being used in an efficient manner. The task for the production of agricultural products is being fulfilled. During the first year of their operation alone, 32 kopecks worth of agricultural products were obtained per ruble of fixed capital. Using Gosbank loans, the Rezh Nickel Plant in Sverdlovsk Oblast built two pigsties. Based upon a computation for reimbursement, the planned output volume must amount to 40 tons of meat annually. Actually, 57.6 tons were obtained during 1981. The planned capability of the pigsties was achieved during the first year following their introduction into operations. Compared to 1980, meat production in physical terms increased by a factor of 1.6, with approximately 70 percent of the meat produced being sold to the workers. The remaining portion of the meat is being turned over to the plant's dining hall.

The Novokuznetsk Furniture Factory in Kemerovo Oblast built a hothouse using Gosbank credit. During 5 months of 1982 it obtained 4.8 tons of cucumbers and 0.6 tons of onions. The hothouse products are sold to the factories manual and office workers. The economic organ plans to build another hothouse in the future. This will make it possible to satisfy completely the fresh vegetable requirements of its own workers as well as those attached to other furniture factories in the oblast.

However, it bears mentioning that not all of the credit is being used in an efficient manner, nor are the schedules for constructing and placing installations in operation always being followed. In addition, these installations do not always carry out their full workloads. The results of a practical study on the presentation of credit for the development of subsidiary farms testifies to the existence of a number of unsolved problems. These

problems are exerting an adverse effect on development of the subsidiary farms and they are resulting in over-expenditures of resources and increased production costs. This includes failure to supply the industrial enterprises with construction materials, equipment and agricultural implements. Usually, during the formulation of loans, the enterprises call for complete support for the installations under construction in the form of all of the materials required, including implements and agricultural equipment, labor resources, feed and young stock. In actual practice, shortages are encountered in the case of many construction materials and items of technical equipment and difficulties are encountered in acquiring young stock and feed. In addition, the ministries do not always furnish proper assistance to the enterprises in solving these problems.

Owing to inadequate support in the form of materials and insufficient manpower, a hog complex for 500 head, built at an estimated cost of 953,000 rubles at the Uchaly Mining-Enrichment Combine in the Bashkir ASSR, was placed in operation a year later than planned, despite the fact that during the drawing up of credit the enterprise presented information and documents confirming the availability of everything that was required for carrying out the construction. A deferment of the loan was presented in order to ensure completion of the construction of this installation. As a result and compared to the computations, a shortfall in output amounting to 192,000 rubles was experienced. The complex is now in operation and yet its capability is being utilized by only 18.8 percent.

As a result of failure to obtain the required equipment, the schedule for the construction of a pigsty at the Kitoyles Association in Irkutsk Oblast was disrupted. During the course of a review of the possibility of credit being extended by the bank, the enterprise presented information on the delivery of the equipment by the Sel'khoztekhnika Association. However this equipment was not delivered at the established time.

For similar reasons, of 30 installations created by means of Gosbank credit within the Arkhangel'sklesprom Production Association, only four were placed in operation in accordance with the established schedule.

At the subsidiary farm of the Krasnoyarsk Tire Plant, the plans called for 600 hogs to be placed on a fattening regime twice annually. Actually, only 300 head were assigned for such fattening. But even this number of hogs was not supplied with the required amount of feed and as a result some of the animals perished. The farm does not have its own feed base.

The subsidiary farm of the Manturovoles Association in Kostroma Oblast has no agricultural land whatsoever; it uses food scraps only and this precludes the possibility of obtaining the planned weight increases and leads to an increase in the production costs for the products.

In some instances the construction of subsidiary farms and the extension of credit for this purpose are being held up owing to the fact that coordination of the standard plans is being carried out not by the planning institutes but rather by specialized planning organizations of the ministries. In particular, it was for this reason that delays ensued in reviewing the estimates for the

construction of a pigsty-fattening stable at the Kolchugino Elektrokabel' Plant in Vladimir Oblast.

The extension of credit for subsidiary farms is promoting an increase in the production of agricultural products for improving the supply of goods for labor collectives. However, since the majority of the enterprises are organizing farms which are small in size, their profitability remains low and thus the repayment of credit by means of additional profit from this measure is not always ensured.

Moreover, even at a number of well organized subsidiary farms the products being obtained are unprofitable owing to their high production costs. Thus some enterprises, with the knowledge of the ministries, call for overall profit from their production-economic activities in the financial plans as a source for the repayment of credit obtained and for the purpose of obtaining loans they present the bank with unauthenticated computations of effectiveness, as a result of which credit is not extended to them.

There can be no doubt regarding the importance of the work carried out by the enterprises and organizations in connection with increasing the production of agricultural products. However, it is apparent from the examples cited that in the interest of raising the effectiveness of the credit extended for the creation of subsidiary farms, solutions must be found for an entire series of problems.

The carrying out of work associated with creating the logistical base for subsidiary farms is being carried out and in the future will be carried out using the economic method. This causes special difficulties in connection with ensuring that construction materials and manpower are available, that the agricultural lands made available are properly developed and that sufficient animals are present in conformity with the capabilities. As a result, reimbursement for the farms thus created is not always ensured within the established periods. Thus, in the interest of achieving more complete mobilization of the intra-farm financial resources, it is considered advisable to authorize the industrial enterprises to employ when necessary for the purpose of making repayment on loans obtained the overall above-plan profit obtained from the economic and financial activities of the production associations and enterprises. This will promote further development in the issuing of credit for subsidiary farms.

Experience has shown that the coordinating of standard plans for subsidiary farms with the specialized planning institutes consumes a great amount of time. Thus, in the interest of accelerating the creation of subsidiary farms and obtaining additional agricultural products from them for satisfying the requirements of public catering and the labor collectives, a review must be undertaken together with USSR Gosstroy of the problem of authorizing the ministries and departments to coordinate the standard plans with the departmental planning organizations and design bureaus.

Numerous facts have shown that during the course of formulating credit and notwithstanding the presentation of information on the availability of feed and livestock, the subsidiary farms actually experience shortages in both areas and this leads to incomplete utilization of the production capabilities,

to a reduction in weight increases, to an increase in production costs and to a reduction in profitability. In this regard and when solving the problem concerning the possibility of issuing a loan, it is considered advisable for the enterprises to present the bank with extracts from the decisions handed down by the executive committees of local soviets of people's deputies on the allocation to them of livestock and tracts of land for forage crops.

Subsidiary farms constitute a new and complicated type of operation for the industrial enterprises. They require cadres of specialists and skilled advice. There have been incidents of great losses being sustained as a result of the unskilled management of these farms. Thus a need exists for solving, on a centralized basis, the problem of creating the positions of zootechnician, veterinary doctor, agronomist and other agricultural specialized operations on the staffs of those industrial enterprises which create subsidiary farms. The categories of the subsidiary farms should also in all probability be determined by agreement with the USSR Ministry of Agriculture and also the standard tables of organization for each category.

At the present time, for individual and even a limited number of installations associated with the development of subsidiary farms, the credit limits for enterprises of republic subordination are obtained from the Russian republic office of Gosbank and for enterprises of union subordination -- only from the Gosbank Administration. In our opinion, in order to achieve a more efficient solution for the problem of issuing credit for fixed capital, the rights of the oblast, kray and republic (ASSR) offices of Gosbank with regard to maneuvering the free crediting limits established for the enterprises of each ministry should be expanded and the allocation to them of a reserve of long-term credits for the mentioned purposes should be introduced into operational practice.

In the case of comparatively small subsidiary farms of industrial enterprises, the specific nature of agricultural production requires appropriate specialized implements and technical equipment. It is considered advisable for a number of enterprises, by agreement with the Ministry of Transport and Agricultural Machine Building, to be tasked with the production of agricultural equipment adapted especially for subsidiary farms.

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FORESTRY AND TIMBER

MINISTRY COLLEGIUM REVIEWS TIMBER, PAPER INDUSTRY OPERATIONS

Moscow LESNAYA PROMYSHLENOST' in Russian 7 Jul 83 p 1

Article: "To Develop In An Organized and Efficient Manner"

Text An expanded meeting of the Board of USSR Minlesbumprom Ministry of the Lumber and Paper Industry was held on 5 July. It involved the participation of executives of the CPSU Central Committee, the USSR Council of Ministers, USSR Gosplan, USSR Gosnab, the ministers of union republics, the chiefs of all-union associations, administrations and departments of the ministry's central staff and the leaders of the central committee of the professional trade union.

Discussions were held on the operational results of the industry, capital construction for the ministry during the first 6 months of this year and the tasks for ensuring fulfillment of the plan for 1983, in light of the decisions handed down during the June (1983) Plenum of the CPSU Central Committee and the speech delivered before the Plenum by the general secretary of the CPSU Central Committee Comrade Yu.V. Andropov.

The deputy chairman of the USSR Council of Ministers L.A. Kostandov participated in the work of the board and delivered a speech.

It was noted with considerable alarm that despite the considerable amount of work carried out in connection with implementing the decisions of the 26th CPSU Congress and the November (1982) Plenum of the CPSU Central Committee and fulfilling the tasks for a number of indicators (normative net output, sales of products, growth in labor productivity, production of newsprint paper and consumer goods and some others), the ministry has still not succeeded in overcoming its backwardness. Individual branches, particularly the timber procurement and sawmill industry, housing construction, many associations and enterprises, especially the Irkutsklesprom VPO All-Russian Printing Association, Krasnoyarsklesprom, Dal'lesprom, Arkhangel'sklesprom and Komilesprom, the Bratsk LPK Lumber Industry Complex, Selenginsk TsBK Pulp and Paper Combine and the Amur TsKK Cellulose Cardboard Combine are continuing to operate in an unsatisfactory manner.

Certain plans are not being fulfilled: for the procurement and shipping of wood, for the production and contractual delivery of lumber, including such important types as posts, poles, sleeper ties, saw timber, lumber and technological chips for the TsBP /Pulp and Paper Industry/; for the production of cellulose, cardboard, plywood, box packaging materials, panels, wooden houses of plant manufacture, sets of parts for houses and a number of other items. For the ministry as a whole, over a period of 6 months, the obligations for the delivery of more than 400 million rubles worth of products, from the standpoint of the established nomenclature were not fulfilled.

The board listened to reports delivered by the 1st deputy ministers of the USSR Timber, Pulp and Wood-Processing Industry Yu.A. Yagodnikov and N.G. Nikol'skiy, deputy ministers V.M. Ventslavskiy, Yu.P. Onishchenko, G.F. Pronin and V.A. Sentyushkin, the chiefs of VPO's I.S. Iyelev (Komilesprom), V.N. Zhiganov (Soyuztselyuloz), P.Ya. Mitchenko (Soyuzplitprom), A.I. Chudovskiy (Sevzapmebel'), Ye.A. Kurbash (Permlesprom), V.N. Vysotskiy (Soyuzlesstroy), V.S. Plokhov (Arkhangel'sklesprom), A.N. Smirnov (Soyuzfanspichprom), V.S. Simakov (Soyuzlesdrev), N.S. Lyashuk (Sverdlesprom) and it analyzed the causes of non-rhythmic operations by the mentioned subunits and their failure to fulfill the assortment program in terms of those products which are in short supply.

It was recognized that individual leaders of the ministry's administrations do not always respond rapidly in solving operational problems. The leaders of backward associations did not draw the proper or practical conclusions from the instructions handed down during the November (1982) and June (1983) Plenums of the CPSU Central Committee, they did not reinforce the decisions and obligations adopted through the carrying out of specific work and they are not making adequate use of the opportunities available for increasing the intensification and raising the efficiency of production, improving economic activities, accelerating scientific-technical progress, raising labor productivity, increasing production and raising the quality of output. Just as in the past, the plans are being carried out at the cost of great expenditures. More attention must be given to capital construction, to placing new capabilities in operation and to mastering existing capabilities more completely. The norms for the expenditure of fuel, raw materials, electric power and materials are not being observed in all areas, nor is efficient use being made of financial and labor resources. Only a limited amount of work is being carried out in connection with the utilization of waste products and the conversion of secondary wood raw materials into useful final products. Some associations and enterprises performed worse during the second quarter than they did during the first.

Emphasis was placed upon the fact that the chief criterion for evaluating operations is the degree of satisfaction by the branch of the constantly increasing requirements of the country's national economy for wood and timber products.

A number of leaders were criticized sharply for serious neglect in their management of subordinate production associations and enterprises: the leaders of Glavlesprom comrades Skorobogatov and Belov, of all-union associations comrades Sakharov (Irkutsklesprom), Savchenko (Dal'lesprom),

Mitroenko (Soyuzplitprom), Zhiganov (Soyuztsellyuloz), Kurbash (Permslesprom), Yemel'yanov (Krasnoyarsklesprom) and others. The principal causes for the unfinished work were pointed out: low level of executive discipline and organizational and technical management, considerable periods of intra-shift idle time of equipment and losses in working time and excessive idle time of freight cars waiting to be loaded.

Just as in the past, a weak area in timber procurement production operations continues to be the slow construction of year-round timber-carrying roads, disruptions in the tasks for making wood available for rafting, a sharp reduction in the timber procurement rates during the summer months and low yield of workable grades during bucking operations. The references by individual leaders to poor weather, personnel, equipment and freight car shortages, a disparity between the production plans for round timber and the available timber fund and other "objective" factors were considered to be without foundation.

Minister M.I. Busygin and other speakers emphasized that the problem lies not in the weather or poor forestry fund, but rather in the insufficiently high responsibility of economic leaders and engineering services for the plan and for the creation of economic and organizational conditions which will stimulate high quality productive labor. The forces of inertia and inability to abandon antiquated procedures are having an effect. A new style of management must be introduced in a more active manner and it must be directed towards raising responsibility, initiative and socialist enterprise and achieving the best final results with minimal expenditures and with no increase in the number of workers.

The branch has at its disposal everything that is required for fulfilling the assortment plan. Our true reserve includes making the best use of equipment, introducing mechanization, perfecting the technology, improving the organization of labor and strengthening discipline. A decisive change must be carried out towards practical tasks and new methods of management.

The year 1983, the pivotal year of the five-year plan, will determine the success of the entire five-year plan. The principal task at the present time is that of achieving unconditional and accurate fulfillment of the planned tasks and contractual deliveries of the products by each enterprise and association in terms of the entire nomenclature of products. The lag tolerated during the 1st 6 months must be made up during the following months, such that the branch will commence 1984 with a reliable inventory.

The socialist competition must be further expanded and not only for the fulfillment and over-fulfillment of the production plans, but mainly for the purpose of raising the quality of the products, improving the utilization of the production capabilities and achieving economies in the use of raw materials, power and working time. We have many remarkable innovators and leading enterprises and associations, the experience of which must be disseminated on an extensive scale. Rhythmic operations are being carried out by the Minlesprom's [Ministry of the Timber Industry] for the Belorussian and Ukrainian SSR's, Novgorodles, the furniture industry, the cellulose-paper enterprises in Arkhangelsk Oblast, an association of the Syktyvkar LPK. Operational improvements have been achieved by the VPO's of Kirovlesprom and Karellesprom and by the timber-chemical industry.

The minister of the Timber and Wood-Processing Industry of the Belorussian SSR A.Ya. Kiykov, who participated in the debates, shared his experience in the area of self-support in the area of wood through the best use of local timber raw material resources and a successful campaign for implementing the assortment program.

The board held a sharp discussion on increasing the role played by the leaders at all levels and raising their responsibility not only for organizing the work and achieving an efficient production rhythm but also for the political, labor and moral training of the personnel, as required in the decisions handed down during the June (1983) Plenum of the CPSU Central Committee. Emphasis was placed upon the need for having the economic executives display constant and effective concern for the workers and their working and living conditions. Attention was directed to the fact that some leaders have still not renounced the office style of management, they are drowning in a sea of paperwork and they do not consider it necessary for them to speak out before the work collectives or to hold confidential discussions with the personnel on all of the important problems. Only a lack of attention for the personnel can explain the facts cited in the speeches concerning the excessive delays in the construction of schools and the repair of housing, children's pre-school institutes and stores in a number of forest settlements. It was emphasized once again that the merging of organizational and economic work with political work alone will produce the desired effect and that the leading personnel must be held responsible for the educational consequences of their economic activities. They must reach down to the lowest levels, to each worker and maximum benefit must be derived from intercourse with the masses.

The chairman of the central committee of the professional trade union M.V. Kuleshov stated in his speech that in solving the serious economic and ideological tasks bold use must be made of the rights and opportunities extended to the work collectives by the recently adopted law. Importance is attached to raising their role in controlling production and training the personnel. However, at some enterprises the administration is not carrying out completely the conditions of the collective contracts and only rarely are the economic leaders delivering reports on their work to the collectives during worker meetings. The role and importance of the PDPS /standing production conference/ must be raised in every possible way.

The speakers stated that brigades which operate on the basis of contracts serve as a fine form for self-administration and for training personnel in a spirit of collectivism and responsibility for assigned tasks. This form for the organization and stimulation of labor should be developed to the maximum possible degree.

Deputy Minister K.M. Prodayvod touched upon the important problem of selecting, placing and training personnel within the branch. The personnel work being carried out in some subunits, for example in Dal'lesprom and Soyuzfanspichprom, is very unsystematic in nature.

The board directed the attention of the leaders of backward subunits to the need for radically improving their work and it outlined measures for providing them with practical assistance. It took into account the assurances of the

speakers that they will undertake decisive measures to eliminate indebtedness and fulfill the annual tasks for the complete nomenclature, including the deliveries of timber products for export purposes and for the agroindustrial complex and the production of consumer goods. In the process, mention was made once again of the need for good operational results rather than unsubstantiated assertions.

In light of the decisions handed down during the June (1983) Plenum of the CPSU Central Committee, the board has required leading personnel to strengthen organization in every possible way in all of the administrative elements, to combat sluggishness, mismanagement and seniority in a more energetic manner and to master more confidently Lenin's operational style, in which executive ability is combined with a creative approach and business-like efficiency and practicality -- with industry and enterprise.

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FORESTRY AND TIMBER

REVIEW OF KARELIAN TIMBER INDUSTRY

Moscow PRAVDA in Russian 4 Jul 83 p 2

[Article by V. Kiryasov, correspondent for PRAVDA, and V. Litvinov, correspondent for LESNAYA PROMYSHLENNOST': "The Forests of Karelia"]

[Text] When the war left Soviet lands some 40 years ago, much of the economic base was destroyed and burned down by fascists in cities and villages. Timber products were needed to rebuild the economy, and they were abundant in our country's northern European area. The most accessible reserves were to be found in Karelia. The supply of timber from this autonomous republic grew rapidly.

The lumber industry developed quite rapidly, and the number of modern sawmills increased. The largest home building complex has been in operation since the 1940's, each year producing 10,000 wooden cottages for rural areas. Output of the following products is now being increased: pulp, cardboard, wallpaper, furniture, sporting and consumer goods. Huge paper complexes are going up in Segezha and Kondopoga. They will process more than 40 percent of felled timber in the republic. In other words, Karelia has a many-sectored timber industry. More than half of the region's industrial output depends on it.

All is not well, however, in the industry. The republic is able to supply much timber, yet it is beginning to ship in cellulose and pulpwood for the paper industry and wood fiber panels for the furniture industry.

Karelia's forest reserves have been noticeably reduced. Specialists conclude that the reserves necessary for continuous forest usage are gone. Each year the republic supplies more than 12 million meters³ instead of 8-10 million. Is this rational?

Let's take just one simple fact. The USSR Gosplan sets output plans for forestry workers in Karelia without considering the structure of the area to be worked. This means that the more valuable pine and fir stands are felled, while the less valuable evergreen and all the deciduous stands remain untouched. Only birch and aspen stands remain in excess of 1.5 million meters³ annually, and these will now be used to supplement varieties of the pine family. This of course means that reserves of pines and fir trees are "vanishing" all the more rapidly.

Because of this delicate situation in the forest area now being worked, the Karelian ASSR is in an unfavorable position compared with many other oblasts. Problems exist not only in the area of forest usage but also in the distribution and in the marketing of timber. We have in mind the year-round shipments out of the republic, this occurring while local wood processing and paper enterprises experience a shortage of raw materials.

G. Vorob'yev, chairman of the State Committee for Forestry, recently announced that timber beyond what is called for in plans simply cannot be taken from forest areas being worked. Concerning this problem, one of us addressed himself to M. Busygin, minister of the timber, pulp and paper, and wood processing industry. He was even more specific on this issue.

"In Karelia we are being forced to work certain areas for the third time."

And just what is the situation here? How can we maintain a continuous usage of the forests while ensuring an uninterrupted supply of timber in the necessary amounts to workers in the lumber and paper industries? Experts report that we must, most importantly, curtail work in the more important forest areas, this in order to satisfy the demands some 50-60 years into the future. This will enable us to a certain degree to conserve our resources and to eliminate massive importation of pulpwood and wood chips from other oblasts.

It is time that planning organs pay attention to scientists and specialists, that both the varieties of timber and the processed products more closely match the structure of the forest areas to be worked. The industry should also be set up so that the forest area can be effectively and entirely worked by local enterprises. This will be a huge economic plus, greatly decreasing resource losses.

The forest industry in Karelia has very distinctive characteristics. In order to hasten the development of the entire industry, we must speed up implementation of scientific principles in forest usage and ensure that more timber is processed close to the area of its origin.

Since the end of the 1960's the autonomous republic has set a goal whereby its forests will be exploited more completely and in a more unified manner. In wooded areas and in low-lying areas of timber and fur farms, limbs and other byproducts are being collected and processed into industrial and hydro-litic wood chips. Sawdust, bark and pole-like pieces from sawmills are being used. The production of processing material out of byproducts for use in the paper industry has already surpassed a million meters³.

The success of the Karellesprom association is particularly noteworthy. Fifty-six lines in its enterprises are now producing wood chips for industrial use. This means 50 meters³ of wood chips for every 1,000 meters³ of timber shipped out, or twice as much as in neighboring oblasts. A total of 136 meters³ of wood is now taken from each hectare of taiga.

to resolve the problem of supplying raw material to pulp and paper complexes, scientists in Karelia have worked out a long-term program for a rapid re-growth of forest areas. It includes greater skills in managing forests, a rational and complex-wide use of timber, and various ways of increasing the resources of spruce. The lack of necessary machinery and very short transportation routes prevent current forest practices from being carried out correctly.

Specialists call for immediate regrowth of evergreen and deciduous stands. It is time to produce trees for pulpwood in forestry areas. This must be done, however, on the basis of indigenous varieties; then too it should not be done on a large, industrial-type scale as the soil is not of the same type in all locations. Efforts of timber farms, timber enterprises, fur farms, chemical-timber farms and reclamation stations are still not coordinated. There is no unifying element in their work. Even though they many often be located in the same forest settlement, they have different plans and sources of financing, divide up and take their supply from the forest independently of one another, and even regrow the forest in an uncoordinated manner. Each builds its own small warehouses, processing lines, garages, units for the manufacture of wood chips, housing and consumer-social institutions.

"The unfortunate part of this parallel work," claims V. Brovkin, director of the Ladvinskiy Timber Farm, "is that you can't undertake anything on a large-scale, the money available being used only for smaller items. If you could only build the living and work facilities that you need."

Such complaints can be heard in other settlements as well.

Today, when each forestry enterprise has its own production base, it is difficult to make effective use not only of the natural wealth but also of equipment, to encourage the necessary regrowth of forests and to attain continuity in forest usage.

In the interests of the state and of forestry enterprises and enterprises in the forestry industry, it is necessary to set up complex-wide production associations and to devote efforts and funds to the more serious production and social problems. Right now heads of the USSR Ministry of the Timber, Pulp and Paper, and Wood Processing Industry, the USSR State Committee for Forestry and several other national administrations are unable to reach agreement on coordinated activities. And there is certainly no joint program in Karelia. We happened to discuss this with directors of the Karelles-prom and Karelleseksport associations, Yu. Ivanov and N. Pershin, and with the republic's minister of forestry, A. Belyatko. Under various pretenses they ruled out joint efforts. Neither the obkom nor the Council of Ministers of Karelia have taken a definitive stance on this issue.

We must point out that there are fewer and fewer unworked forests, and the areas being felled are growing smaller. And if measures are not taken now, then within 30-40 years local pulpwood, paper and wood processing enterprises will be left without a reserve base.

The Karelian forestry complex demands more attention to its needs. The ability to supply many types of products to the economy depends on the strength of this complex.

FORESTRY AND TIMBER

WATER TRANSPORT OF TIMBER

Rafting Problems

Moscow LESNAYA PROMYSHLENNOST' in Russian 7 Jun 83 p 1

[Article by S. Demidov, correspondent for LESNAYA PROMYSHLENNOST', and by A. Gundorov, correspondent for VODNYY TRANSPORT: "From Mutual Blame to Mutual Help"]

[Text] The difficulties encountered this past winter by wood processing, pulp, paper and furniture enterprises in regard to raw materials are well known. The rail system could not handle the planned amount of shipments. Workers on water transport routes can and must make up for the severe timber shortage during the navigation season. During this busy period timber rafters must move about 60 million meters³ of timber in rafts and barges. This is a huge task, but it can be fulfilled by accurate, well-planned work on the part of rafters and river men.

A decree issued by the CPSU Central Committee and by the USSR Council of Ministers on contractual obligations for product supply stresses the importance of well-planned and continual work in transport. The supply issue is also critical for workers on the waterways. There are already positive signs in worker coordination. The second navigation period is marked by competition between workers of the all-union timber association Kirovlesprom and the Vyatskoye River Line under the slogan "From Mutual Blame to Mutual Help." This competition was approved by members of the USSR Ministry of the Timber, Pulp and Paper, and Wood Processing Industry, the RSFSR Ministry of the River Fleet, Central Committee presidiums of labor unions in the forestry, paper and wood processing industries, and of the maritime fleet.

Unfortunately the experience of the best labor collectives is not widespread on all waterways. Realizing the importance of well-organized water transport of timber, editorial boards of the newspapers LESNAYA PROMYSHLENNOST' and VODNYY TRANSPORT are paying particular attention to the

timber transport situation. We ask that readers bring to our attention problems in the timber transport flow. We await your on-location reports: just what is preventing a smooth operation of timber transport by water, the reasons why boats are sitting idle and why timber is lost as it proceeds down the rivers. Tell us who are the outstanding workers and which ones are most business-like in the work of shipping timber by water.

Even long-time residents can't recall such a stormy spring in the north. The first warm days came in April, 2 weeks earlier than usual. At kilometer 134 of the Northern Dvina, where the river makes a sharp bend, a huge ice jam formed. Then a natural calamity occurred. Within several days the water level had risen by 16 meters. Settlements, work sites and low lying storage areas were flooded. The oblast flood commission together with party and soviet organs were well organized in fighting the elements. People and even some material belongings were evacuated. Still, the flood caused much material damage. The waters carried away a lot of timber, floating structures and machinery were damaged.

Under these conditions, Arkhangel'sklesprom and the Northern River Line should have made concerted efforts to float timber down river while the water was still high. Meteorologists predicted that the water level in the river would fall twice as fast as usual, and this did happen. And even though raftsmen and river workers toiled round-the-clock, several rafts from the winter period with a capacity of 100,000 meters³ had dried out.

Certainly we can make allowances for the unfavorable weather, but is that the sole reason for the emergency situation?

Arkhangelsk forestry workers and the Northern River Line set up socialist competition several years ago, and they have taken specific steps to insure that customers quickly receive their timber supplies. Such cooperation helps in the fulfillment of navigational quotas for timber. River workers and forestry workers had coordinated and well planned efforts last year.

An operational staff from the two enterprises capably handled all questions. As a result, all rafts of the winter period, among which were many with a large volume, arrived precisely at their appointed destinations.

It would appear that this year's busy period has gone quite well, but there have been several errors, among which is the following. The biggest demand for ships came in April and May; at this time many motor vessels had to haul cargo in the high waters of smaller rivers. There are in fact many areas in Arkhangelsk Oblast where the waterways are the highways. Captains with their crews worked continuously; they delivered their cargo and then brought the rafts in tow. When the waters receded, management of the Northern River Line was forced to lay up dozens of ships. River men in turn had no work. They would have been happy to bring rafts down the rivers, but, alas, Arkhangel'sklesprom was unable to provide them with that work.

We posed the following question to the chief of the Northern River Line, I. Ryabov: "Can these unplanned work stoppages be avoided?"

"This is a complex problem," he answered. "But it is time to resolve it. We could have, for example, brought out all rafts with short tow arms from the winter period if only our fellow rafters had just 10 tie-up places for them. Unfortunately they haven't completed work on them. This is one of the reasons why we won't be able to convey large rafts from Krasnoborskiy Rayon, half of which are made up of deciduous species. Forestry workers, in my view, must reduce the volume in the winter float and concentrate their efforts on raft formation during the summer. Right now we will idle almost 30 ships. And because of the lack of work the line is incurring financial losses. Specialists are losing wages, and we are losing specialists."

The chief of the river line complained that each year the number of rafts holding tree trunks increases. To move such a raft without accident is difficult, and additional towing power is needed. Even an additional tug is needed to close off the raft's "tail." And as these rafts with tree trunks are conveyed during times of high water, then it's impossible to find additional ships.

Of course I. Ryabov is considering things from his industry's point of view. Forestry workers have considered things differently. Unfortunately such arguments occur every year, despite the fact that the cooperating workers, who are performing a single state job, have the slogan: "From Mutual Blame to Mutual Help."

We visited for a while with the assistant director of the forest industry section of the Arkhangelsk obkom of the CPSU, I. Parfenov. He noted that poorly-structured rafts are now being assembled, just as in recent years. This is causing unforeseen delays. During the present busy season, river men on the Krasnoborskiy Timber Farm, incorrectly mixing deciduous and evergreen timber in their rafts, were unable to have the timber towed off. Now much must be spent to have the timber hauled out by barge and other transport. Arkhangel'sklesprom has poorly organized the collection of emergency-use timber. At least 10,000 cubic meters have been swept into the White Sea, although rafters have special equipment: trawls, tugs, motorboats.

Many production subunits of Arkhangel'sklesprom don't bother with refloating submerged timber in the summer. Last year only 140,000 cubic meters of timber were refloated. That's just a drop in the ocean.

Refloating timber, we must report, is considered "side-line work" in the oblast. There is of course the fact that there aren't enough timber refloating devices. The local Maymaksan factory, Lesoplavmashin, produces a limited number of the LS-41 device. However, even the equipment available at the oblast rafting offices can return at least 250,000 cubic meters of timber to the economy annually. Yet these machines are often idle or are not used properly. And this year there have been instances when these timber refloating devices have been used as loading machines. We believe that management from Arkhangel'sklesprom must supervise the operation of each such unit.

Hauling Timber Cargo

MOSCOW LESNAYA PROMYSHLENNOST' in Russian 7 Jul 83 p 1

[Article by I. Vakhantsev, director of the State Inspectorate for Timber Flootation, and by V. Vokhmyanin, special correspondent for LESNAYA PROMYSHLENNOST': "Caravans of Timber Cargo"]

[Text] Workers in enterprises of the USSR Minlesbumprom [Ministry of the Timber, Pulp and Paper, and Wood Processing Industry] have already floated 50 million cubic meters of timber down the rivers, exceeding quotas for the second quarter of the year. Receiving areas now have more than 29 million cubic meters of timber, or 118 percent of planned amounts. Raftsmen and river workers are making great efforts during this busy season in the following oblasts: Kirov, Kostroma, Tyumen, Arkhangelsk and others.

The second quarter of the year has ended, the busiest time for workers on the waterways. In this phase of the navigational season for timber, raftsmen and river workers, competing under the slogan "From Mutual Blame to Mutual Help," were to supply users with 27 million cubic meters of timber, the USSR Minlesbumprom and the RSFSR Ministry of the River Fleet reported that this difficult task was completed ahead of time.

From the very beginning of the navigation season the water shipment of timber has been ahead of schedule in Perm, Tyumen, Kostroma, Arkhangelsk and many other oblasts. Little time was wasted, and both machinery and the fleet were well used. As soon as adequate water levels had been reached on rivers of transport, rafts assembled on shore were headed to their specific destinations: pulp, paper, wood processing and furniture enterprises.

Workers of Permlesprom got the navigation season off to a good start. In spite of the capricious weather, Kama raftsmen and river workers of Kamskiy handled shore rafting in a very short time. Staffs from the river line and from Kamlesoplav worked together in Kharino. Each day joint operational meetings were held by wire with all river transport divisions and raftsmen, the previous day's work was analyzed, specific work was detailed, and the fleet was given its schedule for the next day.

To insure refueling and rapid repair of ships, there was a fuel depot as well as a motor vessel, the Reshitel'nyi. It had a staff of qualified metal workers, electricians and welders: technical "first aid."

Each moment of work was of importance. The combined group of workers labored around the clock, accurately and in a well-organized manner. And these are the results: more than 1 million cubic meters of pulpwood have arrived at receiving areas for use by paper makers in Perm Oblast, and around 2 million cubic meters have been sent off to the Volga.

Kama raftsmen are handling the timber float quite well. By 1 July the Kerchevskiy facility had rafted more than 1 million cubic meters of timber. This is most heartening. At this pace and after having cleared loose-floating timber, the work of sending timber down the Upper Kama could be finished by August. But work doesn't end here. Workers of the Kama River Float Basin must not only clear reservoirs of sunken timber but also gather timber piled upon the shores of the Yamskiy reservoir. Let's just hope that their words are met with actions.

Unfortunately not all enterprises in the sector are successfully carrying out the work of timber floatation transport. Just how many years have rafters and river workers in the Angara basin been unable to find the necessary work contacts? These fellow workers have many complaints against each other, and work stands still. Here is one example where there is no cooperation. The Boguchanlesa and Angarlesa enterprises wasted too much time this year on raft assembly work, forgetting that the Siberian summers are short and don't give much time for timber floating. Two and three shift work was not inaugurated when the navigational season commenced, and much valuable time was lost. Directors of Krasnoyarsklesprom apparently forgot about the decisions reached by the collegium of the USSR Minlesbumprom, that work brigades in the Angara basin must send the first timber rafts downstream a week after the ice has melted. And river workers on the Yenisey must prepare for the same. Ice in the Tatarka region was gone by 23 May, but the Angarles facilities did not begin operating until 15 June. But river workers had their own transport plans, so ships of the Yenisey River Line moved to other rivers in the basin with their cargos for the national economy.

Rafters of the Boguchanlesa and Angarlesa enterprises and of the Taseyevskaya Rafting Bureau are now sounding the alarm. They are set to send off 400,000 cubic meters of timber, yet there is nothing to pull this timber with. So they must use their own vessels which then cannot be used for their own specific technical purposes.

And how many times already has the management of Irkutsklesprom repeated the same mistakes? It is well known that, given the conditions in the oblast, the loose floatation of timber is difficult and depends on the caprices of the weather.

An alarming situation has now developed on rivers in the Kitoyskiy, Bel'skiy and Tulunskiy basins. Here not enough preparation was made for handling the loose-floating logs, and the brief floods were not used for the water transport of timber. And the result is deplorable: Out of 915,000 cubic meters entering the waterways, less than a third arrived at terminal booms. This means that wood processing enterprises located at river mouths will again be out of raw materials; once again these materials will have to be shipped in from many kilometers away by truck.

Such an attitude toward the work of timber floatation is becoming a bad habit, despite the fact that there is a good example to follow in the Irkutsklesprom Association. Those enterprises of the Chunskiy basin that in the past were behind in their work have in the last 2 years been successful in timber floatation work: casting, transport and even clearing of channels has proceeded according to plan.

The peak period is hurrying the rafters along. Preliminary figures indicate that, even with a huge effort from workers on the waterways, the final results will not be satisfactory. Users will once again be short several million cubic meters of timber shipped by water. Just what is the problem? Forestry workers have let us down. How many years have they been unable to have the timber brought out ready for floatation? This year alone they are behind by more than 2 million cubic meters of timber. The following enterprises are greatly behind in bringing out supplies of timber: Krasnoyarsklesprom--596,000 cubic meters; Irkutsklesprom--346,000 cubic meters; Komilesprom--390,000 cubic meters. And there are several others. There is yet another cause for concern. The above-mentioned enterprises continue to haul out timber to rail yards where, because of a lack of flatcars, a lot of wood is piled up. LESNAYA PROMYSHLENOST', in an economic review "Why Has the Road to Floatation Sites 'Grown Over?'", noted that transport methods for forestry products should be improved in the 11th Five-Year Plan.

And the rafters and river workers can handle this task.

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